Groundwater Monitoring Plan Quarterly Monitoring Report No. 8 (October through December, 2004)

Chester Waterfront Redevelopment Project Chester, Pennsylvania

October 2005

Groundwater Monitoring Plan Quarterly Monitoring Report No. 8 (October through December, 2004)

Chester Waterfront Redevelopment Project Chester, Pennsylvania

Prepared for:

Exelon Power 200 Exelon Way KSA1-E Kennett Square, Pennsylvania 19348

Prepared by:

BROWN AND CALDWELL

October 2005

123867.008

LIST OF TABLES

Table No.	<u>Title</u>
1	Derivation of Groundwater Monitoring Plan Target Criteria
2	Q8 Groundwater Quality Data
3	90 th Percentile Concentrations

LIST OF FIGURES

Figure No.	<u>Title</u>
1	Monitoring Well Network
2	Trend Analysis for Well MW-2
3	Trend Analysis for Well MW-3
4	Trend Analysis for Well MW-4
5	Trend Analysis for Well MW-5
6	Trend Analysis for Well MW-9
7	Trend Analysis for Well MW-11
8	Trend Analysis for Well MW-12
9	Trend Analysis for Well MW-13
10	Trend Analysis for Well MW-14
11	Trend Analysis for Well MW-15

TABLE OF CONTENTS

		<u>Page No.</u>
1.0	INT	RODUCTION1
	1.1	Background
2.0	GRO	OUNDWATER MONITORING PLAN4
	2.1 2.2 2.3 2.4	Monitoring Well Network4Constituents of Concern4Monitoring Frequency and Duration5Compliance Evaluation6
3.0	FIN	DINGS AND CONCLUSIONS9
	3.1 3.2 3.3 3.4	Groundwater Sampling and Analysis9Groundwater Quality Compliance Evaluation103.2.1 Comparison to Target Concentrations103.2.2 Trend Analysis11Conclusions14Recommendations15
4.0	REF.	ERENCES16
	ENDI	

1.0 INTRODUCTION

Exelon Power (formerly PECO Energy Company) has completed a Remedial Investigation/Risk Assessment/Remedial Alternatives Analysis (RI/RA/RAA) Report for the Chester Waterfront Redevelopment Project Site (Brown and Caldwell, 2002). The Project Site consists of approximately 90 acres situated along the Delaware River in Chester, Pennsylvania. The Project Site includes the former Chem Clear facility, which was investigated under a RCRA Order from the USEPA. The Chester Project was conducted under the Pennsylvania Department of Environmental Protection's (PADEP) Land Recycling Program (i.e., Act 2), in cooperation with the USEPA. The RI/RA/RAA Report was submitted to USEPA for review on March 23, 2000 and to the PADEP on June 13, 2000. The PADEP approved the Report in their September 11, 2000 letter.

During a meeting on September 7, 2000 among USEPA, PADEP, Exelon Power, and Brown and Caldwell (Exelon Power's consultant), USEPA requested that Exelon Power develop a Groundwater Monitoring Plan (GMP) for the site. The details of the GMP were further discussed at a meeting among these same participants on September 19, 2002, following USEPA's issuance of their Statement of Basis for the Project Site. USEPA approved the GMP (Brown and Caldwell, 2002) with the condition that sampling for metals and polynuclear aromatic hydrocarbons (PAHs) include both unfiltered and filtered samples during the first two quarterly sampling events.

The purpose of the GMP was to collect groundwater quality data from a network of monitoring wells in order to substantiate the existing groundwater quality data and to verify that conditions are in equilibrium and not expected to worsen over time. Although the groundwater pathway was eliminated as an incomplete pathway during the Act 2 Site-Specific approach, shallow groundwater from the site discharges to surface water (i.e., the Delaware River). Thus, the quality of water in the river adjacent to the Project Site is dependent, in part, on the groundwater quality beneath the Project Site. The RI/RA/RAA Report demonstrated that the existing groundwater quality conditions are protective of surface water quality.

The GMP was developed to address USEPA's concerns, and is not intended to be an "attainment" plan under Act 2. Because the groundwater pathway was eliminated in accordance with the Act 2 approach used, demonstrating attainment of groundwater quality was not required.

1.1 Background

A fate and transport analysis (FTA) was conducted in accordance with Act 2 (Section 250.404) to support the Act 2 Site-Specific approach selected for the Project Site. The primary objective of the FTA was to develop an understanding of the dynamics of the subsurface system, namely the interaction of site constituents with the soil/fill, groundwater, and surface water. With this understanding, the occurrence, movement, and disposition of constituents within the subsurface could be reasonably predicted.

The FTA conducted for the Project Site consisted of several components, including the following:

- V-Leach modeling in the vadose zone,
- Synthetic Precipitation Leaching Procedure (SPLP) sampling and analysis,
- Groundwater modeling,
- Groundwater trend analysis,
- Light Non-Aqueous Phase Liquid (LNAPL) evaluation, and
- Surface water modeling.

The FTA yielded compelling support for the premise that the shallow groundwater system beneath the Project Site is in equilibrium with the source areas and the Delaware River. A system in equilibrium indicates that groundwater constituent concentrations and constituent mass flux to the river are not expected to increase over time, but, instead, should decrease as the sources are depleted. A complete discussion of the FTA is included in Section 9.0 of the RI/RA/RAA Report.

Surface Water Modeling

The surface water modeling was not only a component of the FTA, it was also performed in response to the Act 2 requirement (Sections 250.309 and 250.406) to evaluate site-related surface water quality resulting from a diffuse groundwater discharge. As part of the surface water modeling, in-stream river concentrations were estimated and then compared to Pennsylvania and Delaware River Basin Commission (DRBC) criteria, as well as "alternative" criteria for those constituents without Pennsylvania or DRBC criteria. As input into the surface water model, extremely conservative estimates of constituent mass fluxes (based on 90th percentile groundwater concentrations) were used. These values were based on measured groundwater quality data from the Project Site and groundwater flow discharge rates to the river determined by the calibrated groundwater model. The groundwater modeling process involved dividing the Project Site into three "Flow Tubes" situated parallel to the direction of groundwater flow. Flow Tube 1 consisted of that portion of the Project Site upstream from the former PICCO/Chem Clear facilities. Flow Tube 2 consisted of the former PICCO/Chem Clear facilities. Flow Tube 3 consisted of that portion of the Project Site downstream from the former PICCO/Chem Clear facilities. The three flow tubes are illustrated on Figure 1.

As described in detail in Section 8.0 of the RI/RA/RAA Report, no modeled surface water constituent concentrations exceeded an associated surface water criterion within the mixing zone or at the point of complete mixing in the river. Using the most conservative scenario (low river flow at the point of discharge from the Project Site), only acenaphthylene slightly exceeded the lowest associated surface water criterion. Because there was no Pennsylvania or DRBC surface water criterion for acenaphthylene, an alternative criterion was applied. This alternative criterion was the Wyoming Department of Environmental Quality aquatic life water standard. For this compound, as well as virtually all of the organic compounds modeled, the estimated mass flux from Flow Tube 2 drove the predicted concentrations in the river.

2.0 GROUNDWATER MONITORING PLAN

2.1 Monitoring Well Network

The monitoring well network for the GMP consisted of 11 shallow wells located on the former PICCO/Chem Clear facilities that are within the modeled Flow Tube 2. These 11 wells were MW-1, MW-2, MW-3, MW-4, MW-5, MW-9, MW-11, MW-12, MW-13, MW-14, and MW-15. The locations of these wells are illustrated on Figure 1. This monitoring well network is considered representative of shallow groundwater quality that discharges to the Delaware River. Each of the monitoring wells, except for MW-9, MW-13, and MW-14, included in the monitoring network met the following two selection criteria at the time of network selection:

- 1. They were shallow monitoring wells representative of groundwater flow through Flow Tube 2, and
- 2. They have not indicated measurable amounts of light non-aqueous phase liquid (LNAPL) during the various rounds of fluid level measurements (see Table7-1 in the RI/RA/RAA Report).

Monitoring wells MW-9, MW-13, and MW-14 satisfied the first selection criterion, but measurable amounts of LNAPL have been detected in these three wells at least one time. In fact, wells MW-9 and MW-14, along with MW-6, have been used to recover LNAPL via passive product recovery systems as part of the Interim Measures.

2.2 Constituents of Concern

Seven (7) organic compounds and four (4) metals have been identified as constituents of concern (COCs) to be monitored and reported as part of the GMP. The selection of these constituents was based on their frequency and level of detection in groundwater at the site, and on results of the mass balance surface water modeling performed to address diffuse, non-point source discharges to the Delaware River. These 11 constituents consist of: 1) the

volatile organic compounds (VOCs) benzene, toluene, ethylbenzene, and xylenes (BTEX); the polycyclic aromatic hydrocarbon (PAH) compounds 2-methylnaphthalene, naphthalene, and acenaphthylene; and 3) the metals arsenic, beryllium, cadmium, and lead. Of these constituents, the BTEX compounds have been included because they are indicative of former operations and activities at the former PICCO/Chem Clear facilities, and were the VOCs detected most frequently and at the higher concentrations in groundwater samples from the Project Site (see Table 7-2 in the RI/RA/RAA Report). The PAH compounds 2-methylnaphthalene and naphthalene are also indicative of former activities at the Project Site and were the semivolatile organic compounds detected most frequently and at the higher concentrations in groundwater samples from the Project Site (see Table 7-3 in the RI/RA/RAA Report). The final PAH compound proposed for inclusion in the monitoring program is acenaphthylene. Under the most conservative surface water modeling scenario, the predicted concentration of this compound in the Delaware River was slightly above the corresponding surface water criterion (i.e., the ratio of predicted concentration to the standard was 1.29 using the Wyoming water quality standard). The predicted concentrations of other compounds were typically well below the corresponding surface water criteria.

The metals included are generally those that were detected most frequently at the site and considered to be good indicators of possible anthropogenic contamination.

2.3 Monitoring Frequency and Duration

The FTA established that there was equilibrium among the groundwater system, the source areas, and the Delaware River at the Project Site. As such, little if any change in groundwater quality over time is expected, particularly any increasing trends in concentration. Therefore, the monitoring well network consisted of quarterly sampling for a period of two years, resulting in a total of eight sampling events.

Sampling procedures and health and safety procedures were consistent with those employed during the RI/RA/RAA fieldwork for the project, and the subsequent Act 2 remediation. Because PAHs and metals were analyzed for, the sampling procedure consisted of employing low-flow sampling techniques to minimize the potential for the inclusion of metal

or PAH-containing suspended solids in the samples. At the request of USEPA, the samples tested for metals and PAHs during the first two quarterly sampling events included both unfiltered and filtered samples. The filtered samples were field-filtered through an in-line 45-micron filter to further ensure that the soluble fraction is analyzed. Based on comparable results from the unfiltered and filtered sample fractions from the first two quarterly events, future sampling events included only unfiltered samples. The filtered versus unfiltered sample comparison was discussed in the first two quarterly reports (Brown and Caldwell, 2004A, 2004B).

2.4 Compliance Evaluation

The compliance evaluation consists of two primary components. These components are:

1) comparison of groundwater quality data to "target concentrations" presented in the GMP;
and 2) a trend analysis of each of the constituents of concern over time. These two
components of the compliance evaluation are described below:

Comparison of Measured Data to Target Concentrations

The target concentrations are groundwater constituent concentrations, below which will not result in a predicted surface water exceedance of the corresponding surface water criterion at the point of discharge in the river. Derivation of the target groundwater concentrations consisted of the following three steps:

- 1. A "critical" mass flux was calculated for each of the 11 constituents of interest. This mass flux would result in a predicted surface water concentration equal to the corresponding surface water criterion. Similar methodology as that described in Section 8.0 of the RI/RA/RAA Report was used to calculate these values.
- 2. The sum of the mass fluxes from Flow Tubes 1 and 3 were subtracted from the critical mass flux from Step 1 to establish the critical mass flux from Flow Tube 2 that would result in a predicted surface water concentration equal to the corresponding surface water criterion. The mass fluxes from Flow Tubes 1 and 3 were assumed to be constant (i.e., in equilibrium) over time and equal to the

original mass fluxes established for those tubes in Section 8.0 of the RI/RA/RAA Report. As previously stated, Flow Tube 2 (i.e., former PICCO/Chem Clear facilities) is the focus of the GMP.

3. The target concentration criteria were established for the 11 constituents of interest. Because the groundwater flux from the flow tubes essentially remains constant over time, the same groundwater flux that was originally used (see Section 8.0 of the RI/RA/RAA Report) was again used to calculate the concentration for each of the 11 constituents of interest that, when multiplied by the groundwater flux, yields the critical mass flux for Flow Tube 2, as established in Step 2. The established target concentration criteria represent the representative 90th percentile concentrations for Flow Tube 2 that would result in predicted surface water concentrations equal to the corresponding surface water criteria. Therefore, if measured 90th percentile concentrations obtained from individual sampling events of the GMP are at or below these target concentration criteria, then they are protective of the Delaware River.

The values used in the above three steps, and the resulting derived target concentration criteria, are presented in Table 1. A basic assumption of this target criteria derivation method is that the GMP monitoring network wells in Flow Tube 2 are representative of the groundwater discharging to the river. Review of the locations of the wells and existing analytical data from them indicate that this is a reasonable assumption.

The compliance evaluation ensures that the representative groundwater quality (from wells in Flow Tube 2) does not result in an adverse impact to the Delaware River. This involves calculating the 90th percentile concentration for each of the monitored constituents for the monitoring network wells during each sampling event and comparing that concentration to the respective established target concentration discussed above. The measured 90th percentile groundwater concentrations were also compared to the original 90th percentile concentrations used in the original mass flux and surface water modeling efforts, as described in Section 8.0 of the RI/RA/RAA Report. This comparison was designed to indicate whether or not there is an increasing trend in representative groundwater

concentration discharging from Flow Tube 2 over time. The original 90th percentile concentrations established for the 11 COCs are also shown on Table 1.

Trend Analysis

A trend analysis was performed for each of the 11 COCs, and for each monitoring well in the monitoring network. The data included in the trend analysis consisted of the new data collected during implementation of the GMP, as well as previous data collected from the wells from 1994 to present. Initially, a statistical evaluation of the data trends was also planned. However, review of the data suggests that such an evaluation would not add significantly to the understanding of the data trends. Instead, the data have been evaluated on a parameter by parameter basis and well by well. Although identification of an increasing trend would not indicate that compliance criteria have been exceeded, it would serve as an indication that groundwater quality in that well should be further evaluated to ensure that future groundwater discharge to the Delaware River would not exceed the appropriate surface water criteria. A decreasing trend over time would reflect depletion of the source area(s). The trend analysis presented in this eighth and final quarterly report will determine whether further monitoring or corrective measures are appropriate.

3.0 FINDINGS AND CONCLUSIONS

3.1 Groundwater Sampling and Analysis

The eighth and final quarterly (Q8) sampling event associated with the GMP occurred from November 9, 2004 through November 11, 2004. Of the 11 monitoring wells included in the monitoring well network, 9 were sampled by Brown and Caldwell personnel. The two wells not sampled during the Q8 event were MW-1 and MW-3. Well MW-1, along with MW-9 are replacement wells for the original wells that could not be located during the first two quarterly sampling events (i.e., Q1 and Q2) and were apparently destroyed during road construction by contractors working for the current property owner/developer. observation was reported to the USEPA and PADEP Project Managers, and it was agreed to replace these two wells. Wells MW-1 and MW-9 were replaced on August 12, 2003. MW-1 contained measurable amounts of LNAPL during the Q8 sampling event and therefore was not sampled. The other well not sampled during Q8 was MW-3. This well was sampled during the Q1 through Q6 events but could not be located during the Q7 or Q8 events. This well was apparently destroyed during site redevelopment by contractors working for the current property owner/developer. This observation was reported to the USEPA and PADEP Project Managers. Finally, MW-14 was sampled during the Q6 through Q8 events, but was not sampled during any of the previous five quarterly sampling events due to the presence of LNAPL in the well at the time of sampling.

The groundwater samples obtained from the 9 wells sampled were sent to ELAB of Tennessee for analysis of the COCs, including select VOCs (benzene, toluene, ethylbenzene and toluene), PAHs (naphthalene, 2-methylnaphthalene and acenaphthylene), and metals (arsenic, beryllium, cadmium and lead). QA/QC samples included a field duplicate sample from well MW-5, a field rinsate blank, and a MS/MSD sample. The analytical reports, along with field data sheets are included in Appendix A.

3.2 Groundwater Quality Compliance Evaluation

The Q8 analytical data are summarized in Table 2. With regards to MW-5 and the field duplicate from that well, the highest reported concentration has been included in Table 2.

Review of the laboratory reports and QA/QC data indicates that the data are valid for use in the prescribed data evaluation.

3.2.1 Comparison to Target Concentrations

Following the protocol discussed in Section 2, representative 90th percentile concentrations in groundwater beneath the site (within flow tube 2) for the COCs were calculated using the data from the Q8 event. These values are shown in Table 3, along with the original representative concentrations determined during the Remedial Investigation and those associated with the Q1 through Q7 events. The threshold target concentrations are also shown in Table 3, and represent the maximum allowable representative groundwater concentration that is considered protective of the Delaware River and the associated surface water criteria.

Review of Table 3 yields three readily apparent observations, as follows:

- 1. The Q8 representative concentrations for all but two of the COCs (arsenic and beryllium) are significantly lower than those derived from the original data used nearly six years earlier during the RI.
- 2. Representative COC concentrations based on the Q8 data are lower than, and typically orders of magnitude lower than, the threshold target concentrations, indicating that groundwater discharge from the Site to the Delaware River is not adversely impacting river water quality.
- 3. The Q8 representative concentrations are fairly consistent with those derived from the Q3 through Q7 events and noticeably higher than the Q1 and Q2 events for several of the COCs. This occurrence is driven by the significantly higher

concentrations observed in well MW-15 during the Q3 through Q5 events, and the addition of the MW-14 groundwater quality data during the Q6 through Q8 events, from a well that had not ever been sampled before due to the prior presence of LNAPL.

3.2.2 Trend Analysis

The Q8 event represents the eighth and final quarterly sampling event to be conducted as part of the GMP. Therefore, the most comprehensive evaluation of concentration trends has been performed as part of this report. For illustrative purposes, the data trends through Q8 for the COCs have been graphed, along with the available historical data obtained from the monitoring network wells since 1994, although no samples were collected from 1998 until the Q1 event in February 2003. For the purpose of graphing, those data reported as "none detected" or "below the reportable limit" were assigned a value of zero. The graphs for all sampling events are presented as Figures 2 through 11 and are discussed below, by well.

MW-1

Well MW-1 contained measurable LNAPL during all of the quarterly sampling events and therefore was not sampled during the program and no concentration graph has been prepared.

MW-2

Graphical presentation of groundwater quality data from well MW-2 is presented as Figure 2. As the graph indicates, concentrations for most of the COCs indicate subtle fluctuation during the eight quarterly events, but remain significantly lower than the 1998 sampling event. No well-defined increasing trend over time is apparent for any of the COCs.

MW-3

Graphical presentation of groundwater quality data from well MW-3 is presented as Figure 3. As the graph indicates, concentrations of the COCs show a relatively stable trend over the first six quarterly events, and generally lower concentrations as compared to

previous sampling events. No well-defined increasing trend over time is apparent for any of the COCs. This well could not be located during the Q7 or Q8 events, and assumed to have been destroyed during site redevelopment. However, the available data from this well are fairly conclusive that none of the COCs would be expected to increase over time.

MW-4

Graphical presentation of groundwater quality data from well MW-4 is presented as Figure 4. As the graph indicates, concentrations for most of the COCs indicate subtle fluctuation during the eight quarterly events, but remain significantly lower than the 1998 sampling event. No well-defined increasing trend over time is apparent for any of the COCs.

MW-5

Graphical presentation of groundwater quality data from well MW-5 is presented as Figure 5. As the graph indicates, concentrations for several of the COCs increased from 1994 to 1998, but then have dramatically decreased to the levels measured during the Q1 and Q2 events. Several of the COCs indicate a concentration increase from the Q2 event to the Q4 event, followed by a sharp decrease during the Q5 and Q6 events, and subtle increase during the Q7 and Q8 events. This well is located within an area experiencing significant earth moving and redevelopment activity and the observed fluctuations are likely in response to local, short-term disturbances of soil conditions and the groundwater system. No well-defined increasing trend over time is apparent for any of the COCs.

MW-9

Graphical presentation of groundwater quality data from well MW-9 is presented as Figure 6. This well location was not available for sampling during Q1 or Q2. As the graph indicates, there is a sharp decrease in concentration from 1998 to Q3 for those COCs detected in 1998, and concentrations have remained stable through Q8. In fact, only three COCs were detected in MW-9 during Q3 and none of the COCs were detected during the Q4 through Q8 events. No well-defined increasing trend over time is apparent for any of the COCs.

MW-11

Graphical presentation of groundwater quality data from well MW-11 is presented as Figure 7. As the graph indicates, none of the COCs have been detected since the Q2 event, suggesting an overall decreasing trend over time. No well-defined increasing trend over time is apparent for any of the COCs.

MW-12

Graphical presentation of groundwater quality data from well MW-12 is presented as Figure 8. As the graph indicates, concentrations for several of the COCs fluctuated during the first seven quarterly events, but remain significantly lower than those measured in 1998. No well-defined increasing trend over time is apparent for any of the COCs.

MW-13

Graphical presentation of groundwater quality data from well MW-13 is presented as Figure 9. As the graph indicates, concentrations for all COCs have either remained relatively stable or have shown a sharp decrease from the 1998 event through the Q4 event, with a subtle increase in concentration for a few COCs during Q5 and relatively stable concentrations through Q8. No well-defined increasing trend over time is apparent for any of the COCs.

MW-14

The Q8 event represents just the third time this well has been sampled since it was installed in 1998. During all previous sampling events, MW-14 contained significant quantities of LNAPL and therefore was never sampled. In fact, MW-14 was extensively used in the past for the passive removal of LNAPL as part of the Interim Measures. Activation of the newly constructed groundwater collection trench has apparently resulted in the elimination of measurable LNAPL in well MW-14. The concentrations of the COCs from the Q6 through Q8 events are graphed on Figure 10. Due to the limited data set, no discernable data trends can be established. Concentrations of some of the COCs have increased, while others have either decreased or remained stable. However, the lack of LNAPL in this historically LNAPL-laden well suggests improvement in groundwater conditions at this location and reduction of LNAPL discharge to the river.

MW-15

Graphical presentation of groundwater quality data from well MW-15 is presented as Figure 11. As the graph indicates, concentrations of the COCs generally were stable or decreased through the Q2 event, then increased during the Q3 event for a few COCs. Concentrations remained fairly stable during the Q3 through Q5 events, and indicate a marked decrease during the Q6 event, and have remained relatively stable through Q8. No well-defined increasing trend over time is apparent for any of the COCs.

3.3 Conclusions

Based on the findings of the GMP sampling events (Q1 through Q8), the following conclusions are drawn:

- Representative COC concentrations in groundwater discharging into the Delaware River, derived from groundwater quality data from the GMP sampling events, are well below the threshold target concentrations and do not result in adverse effects to surface water quality.
- Trend analysis indicates generally stable, naturally fluctuating, or decreasing trends in COC concentrations in groundwater over time. Concentrations would not be expected to increase over time.
- Data obtained and evaluated from the eight GMP sampling events clearly show no
 increasing trends over time for any of the COCs and support the premise outlined in the
 RI/RA/RAA Report that the groundwater system is in general equilibrium with the
 source areas and river.
- Concentration of the COCs in groundwater are expected to decrease over time, as the source material is depleted. However, the timeframe for significant improvement in groundwater quality could be lengthy.

3.4 Recommendations

Based on the findings of the eight GMP sampling events, the groundwater system at the Site is in general equilibrium with the source areas and river and no further sampling is necessary.

4.0 REFERENCES

- Brown and Caldwell, 2000. Remedial Investigation/Risk Assessment/Remedial Alternatives Analysis (RI/RA/RAA), Chester Waterfront Redevelopment Project, March 2000.
- Brown and Caldwell, 2002. Groundwater Monitoring Plan, Chester Waterfront Redevelopment Project, October 2002.
- Brown and Caldwell, 2004A. Groundwater Monitoring Plan Quarterly Monitoring Report No. 1 (January through March, 2003), Chester Waterfront Redevelopment Project, November 2004.
- Brown and Caldwell, 2004B. Groundwater Monitoring Plan Quarterly Monitoring Report No. 2 (April through June, 2003), Chester Waterfront Redevelopment Project, November 2004.

TABLES

TABLE 1

DERIVATION OF GROUNDWATER MONITORING PLAN TARGET CRITERIA

Constituent of Interest	Critical Mass Flux From All Three Flow Tubes (kg/day) ^a	Sum of Constant Mass Flux from Flow Tubes 1 and 3 (kg/day) ^b	Critical Mass Flux from Flow Tube 2 (kg/day) ^c	Original 90 th Percentile Conc. in Flow Tube 2 <u>Using all Wells (ug/L)^d</u>	TARGET CRITERIA 90 th Percentile Concentration in Flow Tube 2 that Corresponds to the Critical Mass Flux (ug/L)°		
Benzene	1.8	0.02	1.780	13,370	30,394		
Toluenef	5427	0.002	5,426.998	8,240	92,584,811		
Ethylbenzene ^f	899	0.0005	899.000	4,300	15,340,071		
Xylenes ^f	217	0.002	216.998	16,200	3,704,286		
Acenaphthylene	0.005	0.002	0.003	76	51		
2-Methylnaphthalene	2702	0.00	2,702.000	480	46,155,160		
Naphthalene	180	0.02	179.980	5,760	3,076,216		
Arsenic	89.5	0.095	89.405	35	1,526,143		
Beryllium	0.24	0.007	0.233	2	3,977		
Cadmium	1.5	0.006	1.494	14	25,503		
Lead	3.3	2.18	1.120	93	19,118		

Notes:

- a Mass flux which results in a C_{max to} Surface Water Standard ratio of 1.0.
- b Mass flux as originally calculated for Flow Tubes 1 and 3 (see Section 8.0 in the RI/RA/RAA Report). This mass flux is minimal and considered to be constant (i.e., in equilibrium) over time.
- c This mass flux is the difference between the critical mass flux from all three flow tubes and the sum of the constant mass flux from Flow Tubes 1 and 3.
- d Original 90th percentile concentrations as presented and discussed in Section 8.0 of the RI/RA/RAA Report.
- e Target Criteria are those 90th percentile concentrations that would result in a predicted concentration in the river that would equal the corresponding surface water standard. Therefore, measured 90th percentile concentrations derived from the monitoring network that are less than these Target Criteria are protective of the river.
- f The SPLP 90th percentile concentration was higher than the groundwater quality 90th percentile concentration. Therefore, the SPLP 90th percentile concentration was used to calculate the mass flux presented in Section 8.0 of the RI/RA/RAA Report.

TABLE 2 Q8 GROUNDWATER QUALITY DATA

	Concentration (ug/L)										
Parameter	MW-1	MW-2	MW-3	MW-4	MW-5	MW-9	MW-11	MW-12	MW-13	MW-14	MW-15
Benzene	NS ¹	5.4	NS ²	2.8	54	BRL	BRL	1.1	650	9400	1100
Toluene	NS ¹	0.46	NS ²	BRL	22	BRL	BRL	BRL	26	13000	1600
Ethylbenzene	NS ¹	4.5	NS ²	0.78	520	BRL	BRL	0.69	360	680	34
Xylenes	NS ¹	1.3	NS^2	1.4	240	BRL	BRL	0.27	520	2600	110
Naphthalene	NS ¹	BRL	NS ²	2.2	170	BRL	BRL	2.2	200	360	100
2-Methylnaphthalene	NS ¹	BRL	NS ²	BRL	7.8	BRL	BRL	BRL	43	150	BRL
Acenaphthylene	NS ¹	BRL	NS ²	BRL	1.3	BRL	BRL	BRL	BRL	BRL	BRL
Arsenic	NS ¹	9.9	NS ²	BRL	5.3	BRL	BRL	BRL	6	22	90
Beryllium	NS ¹ .	BRL	NS ²	BRL	BRL	∠ BRL	BRL	BRL	BRL	BRL	16
Cadmium	NS ¹	BRL	NS ²	1.6	BRL	BRL	BRL	BRL	BRL	BRL	BRL
Lead	NS ¹	8.7	NS ²	BRL	BRL	BRL	BRL	BRL	37	3.3	BRL

Notes:

⁻ Data presented in data are the highest concentrations among the "Duplicate" sample and the original sample that was duplicated (MW-5). BRL - Parameter was not detected at or above the reporting limit.

^{1 -} Monitoring well was not sampled during this event due to the presence of measurable LNAPL.
2 - Monitoring well was not sampled. This well was apparently destroyed by contractor redeveloping the site for others.

TABLE 3

90th PERCENTILE CONCENTRATIONS

	90 th Percentile Concentration									
<u>Parameter</u>	<u>Original</u>	<u>Q1</u>	<u>Q2</u>	<u>Q3</u>	<u>Q4</u>	<u>Q5</u>	<u>Q6</u>	<u>Q7</u>	<u>Q8</u>	Threshold
Benzene	13,370	940	382	1,160	1,900	1,664	1,505	2,784	2,760	30,394
Toluene	8,240	282	30	2,010	3,680	2,221	2,640	4,160	3,880	92,584,811
Ethylbenzene	4,300	351	224	514	1,040	204	273	368	552	15,340,071
Xylenes	16,200	768	362	776	2,020	700	735	864	936	3,704,286
Naphthalene	5,760	369	360	516	430	560	126	432	232	3,076,216
2-Methylnaphthalene	480	47	36	46	51	50	33	78	64	46,155,160
Acenaphthylene	76	3	3	16	17	7	3	3	3	51
Arsenic	35	14	20	22	22	127	20	23	36	1,526,143
Beryllium	2	3	3	6	7	62	3	3	5	3,977
Cadmium	14	1	1	1	3	3	1	1	1	25,505
Lead	93	3	49	9	4	28	10	10	14	19,118

Concentrations are in ug/l (ppb).

FIGURES

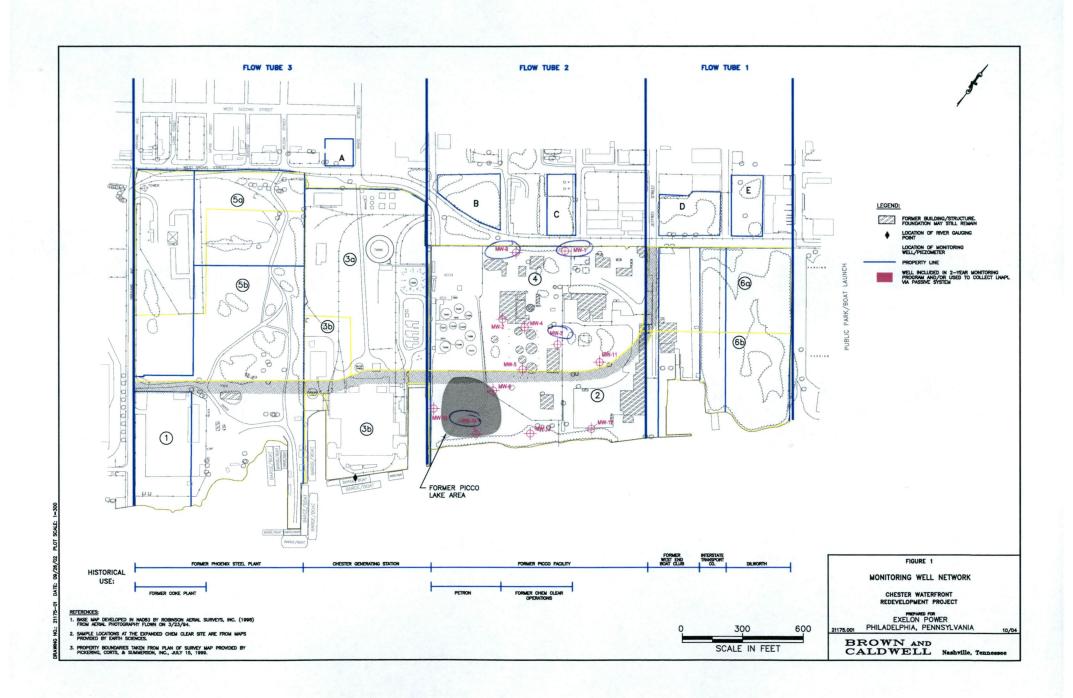


FIGURE 2
TREND ANALYSIS FOR WELL MW-2

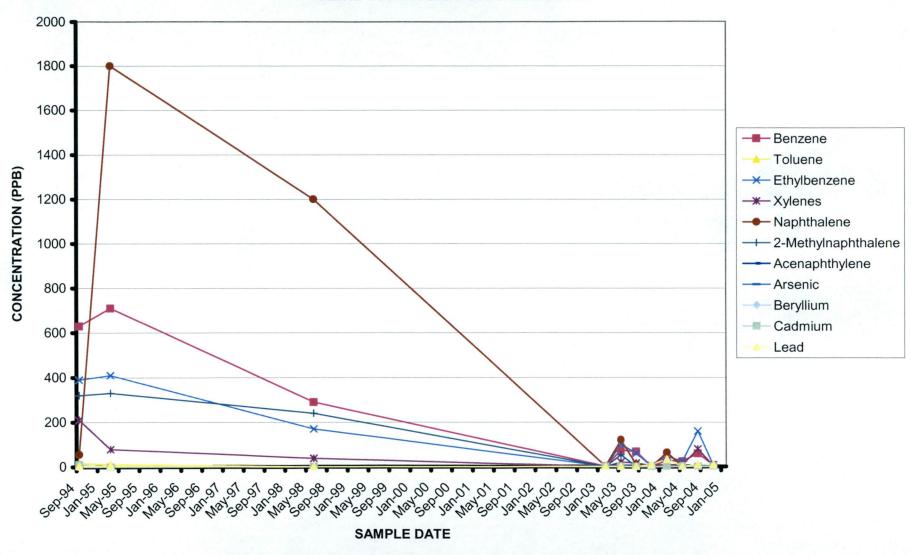


FIGURE 3
TREND ANALYSIS FOR WELL MW-3

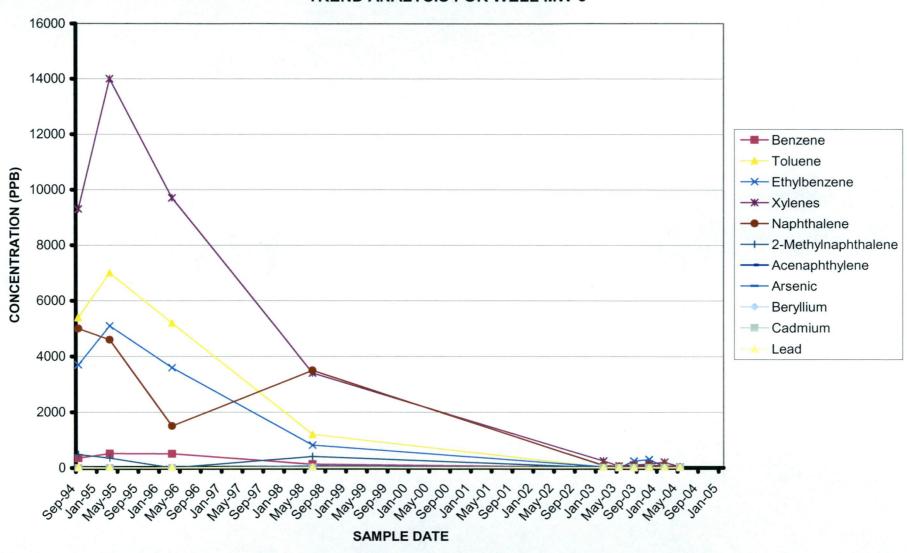


FIGURE 4
TREND ANALYSIS FOR WELL MW-4

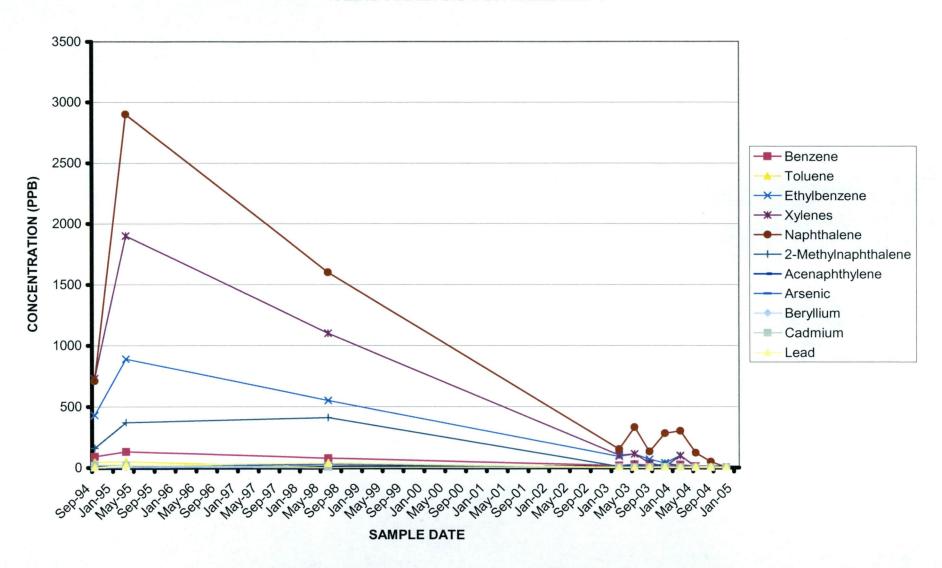


FIGURE 5
TREND ANALYSIS FOR WELL MW-5

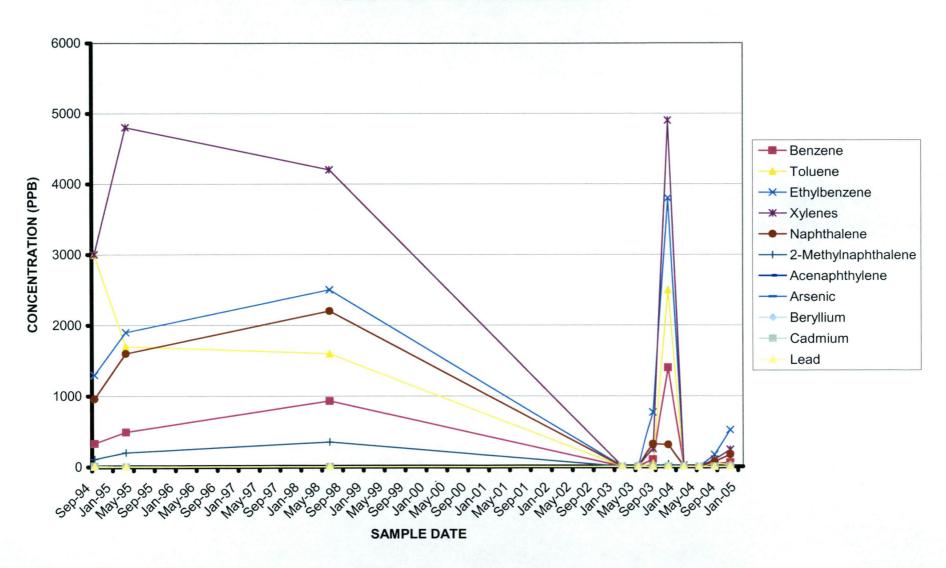


FIGURE 6
TREND ANALYSIS FOR WELL MW-9

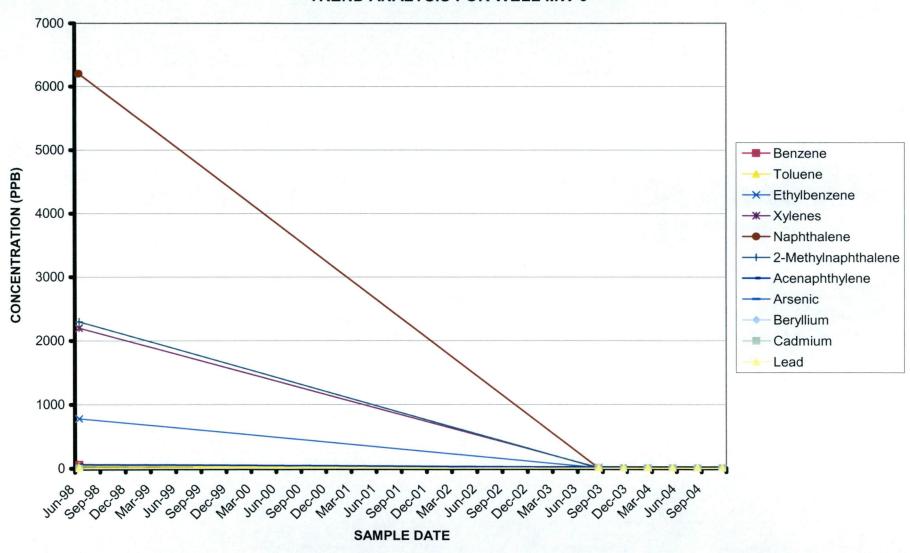


FIGURE 7
TREND ANALYSIS FOR WELL MW-11

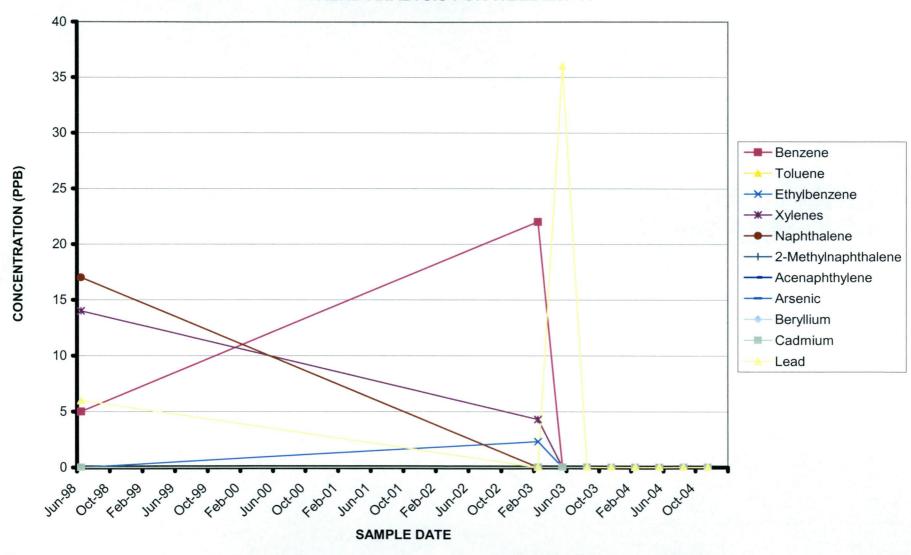


FIGURE 8
TREND ANALYSIS FOR WELL MW-12

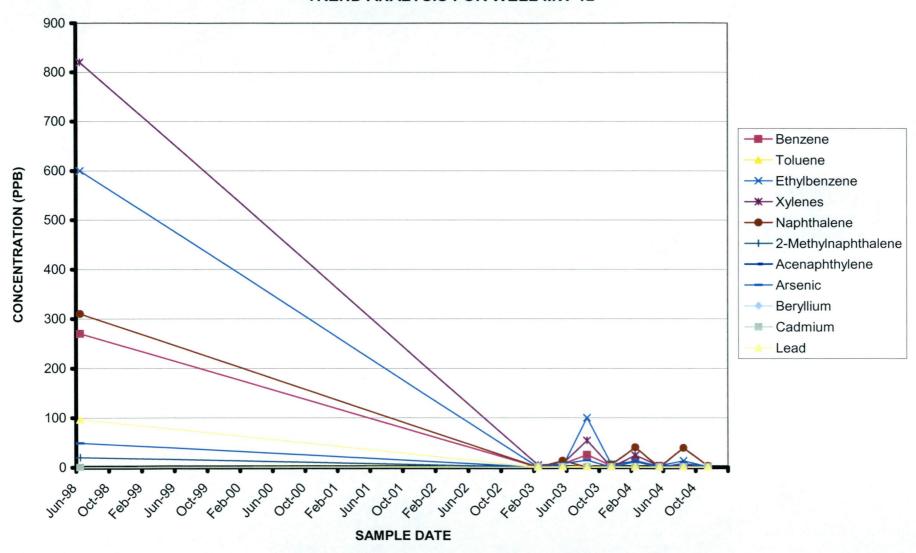


FIGURE 9
TREND ANALYSIS FOR WELL MW-13

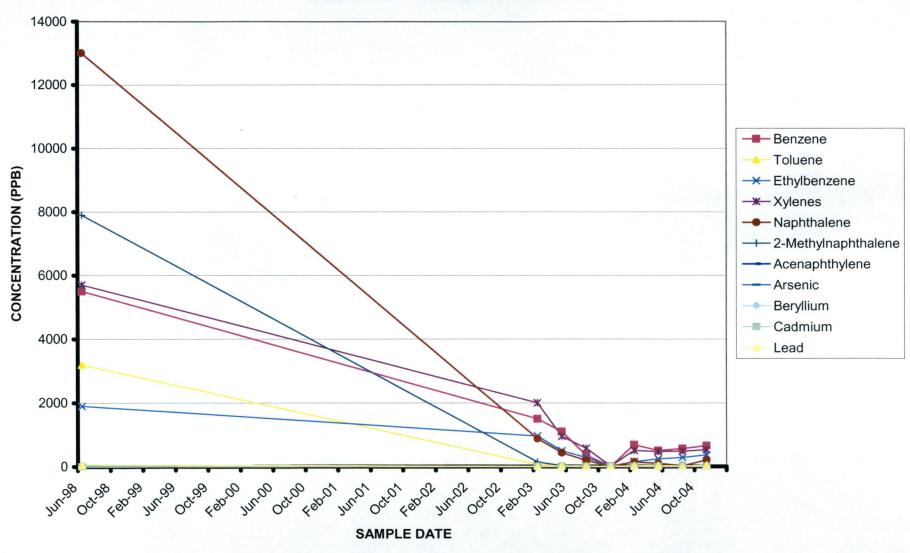


FIGURE 10
TREND ANALYSIS FOR WELL MW-14

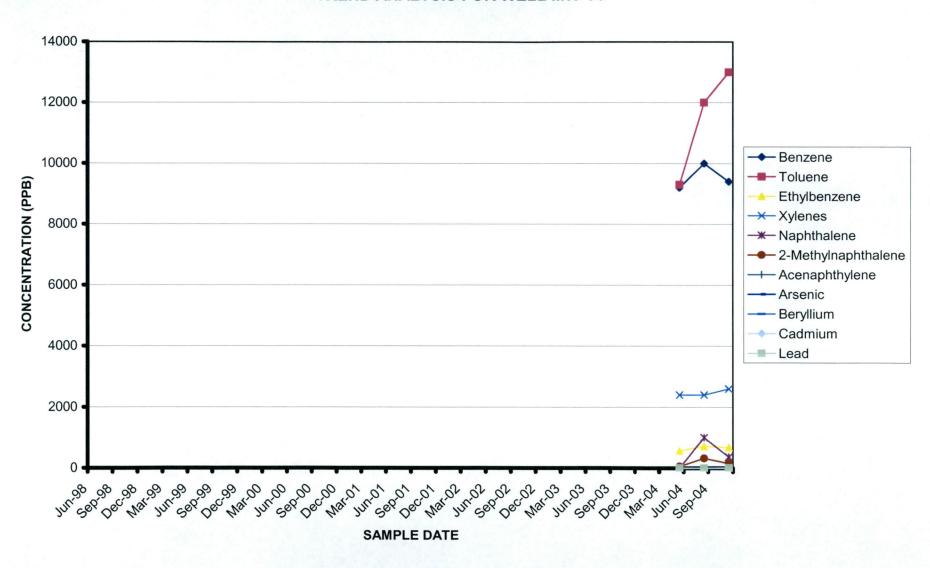
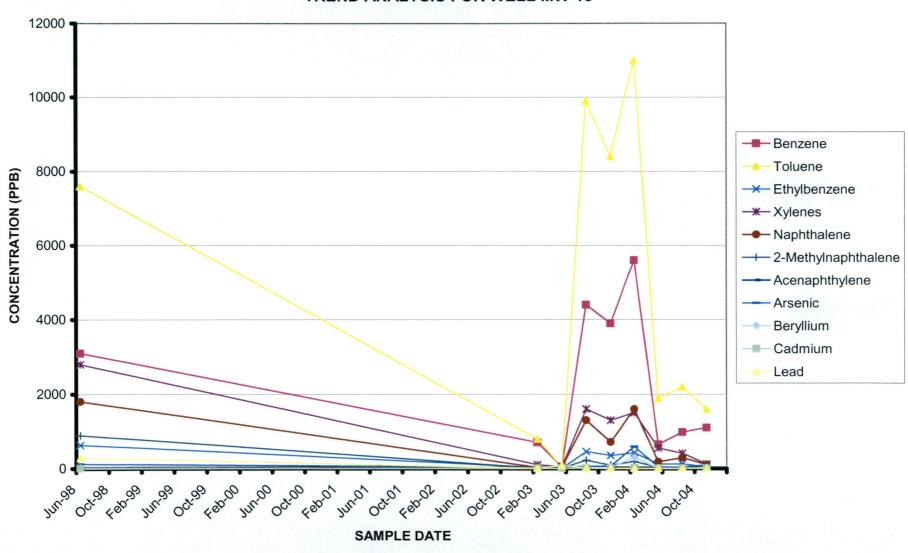
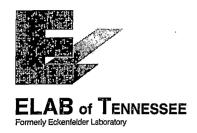


FIGURE 11
TREND ANALYSIS FOR WELL MW-15



APPENDICES

Appendix A Analytical Reports and Field Data Sheets



November 30, 2004

Mr. Mike Watkins Brown and Caldwell 7550 Lucerne Dr., Suite 310 Middleburg Heights, OH 44130-6503

RE: PECO-Quarterly GW

Work Order No.: 0411100, 121, 139

Dear Mr. Watkins:

ELAB of Tennessee, LLC received a combined 11 samples from 11/10/04 to 11/12/04 for the analyses presented in the following report.

Analyses are performed with method-required calibration and QA/QC samples whenever applicable. Method performance, which is based on the calibration and QA/QC samples, establishes the validity and certainty of the reported sample results. This data is provided along with the sample results when requested.

Thank you for this opportunity to be of service. If you have any questions regarding this data, please feel free to call me at (615) 345-1115, extension 249.

Sincerely,

Brian Richard,
Project Manager

ELAB of Tennessee, LLC

Gran Alle

227 French Landing Drive, Suite 550

Nashville, TN 37228

THIS DOCUMENT MEETS NELAC STANDARDS
NELAC Certification #E87646



Client: PECO #23867.001 Date Reported: 11/19/04

ELAB SAMPLE NUMBER			V5BLK1116	V5BLK1117	0411100-01	0411100-02	0411100-0	13
DATE SAMPLED	· - - -	- 	NA	NA NA	11/09/04	11/09/04	11/09/04	 ŧ
DATE RECEIVED		i	NA	NA	11/10/04	11/10/04	11/10/04	Į
DATE ANALYZED		Ì	11/16/04	11/17/04	11/16/04	11/16/04	11/16/04	Ŀ
		- 	M.BLANK	 V5BLK1117		 MW-4	 DUP11090)4
CLIENT SAMPLE DESCRIPTION	N	İ		İ	İ	İ	İ	
		 -			 	 		
VOLATILE ORGANICS	1	i		1	1			
BY USEPA METHOD 8260	EQ	r	CONC	CONC	CONC	CONC	CONC	
Benzene	1.	- 0 <	1.0	< 1.0	5.4	 2.8	51	
Ethylbenzene	1.	0 <	1.0	< 1.0	4.5	0.78 J	500	E
Toluene	1.	0 <	1.0	< 1.0	0.46 J	< 1.0	22	
Xylene(total)	1 1.	0 <	1.0	< 1.0	1.3	1.4	250	E

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.



Client: PECO #23867.001 Date Reported: 11/19/04

ELAB SAMPLE NUMBER			0	411100	0-03D	0411100	-04	0411100-	-04D	0411100-0
DATE SAMPLED			- -	11/09/	 '04	11/09/0	04	11/09/0	 04	11/09/04
DATE RECEIVED			i	11/10/	:	11/10/0	04	11/10/0)4	11/10/04
DATE ANALYZED			İ	11/17/	04	11/16/0	04	11/17/0	04	11/16/04
		-	- - 	DUP110	904	 MW-5		MW-5	 	Trip Blan
CLIENT SAMPLE DESCRIPTIO	N		İ		Ì		ĺ			#2973
			!		İ					
VOLATILE ORGANICS			- - 	5.0	X(1)			5.0	· ((1)	
BY USEPA METHOD 8260	i	EQL	ĺ	CONC	2]	CONC		CONC	1	CONC
			- -							
Benzene]	1.0	1	59	D	54		58	D	< 1.0
Ethylbenzene	1	1.0	!	510	ןמ	440	E	520	D	< 1.0
Toluene	1	1.0	1	22	D	22		22	D	< 1.0
<pre>Xylene(total)</pre>	- 1	1.0	1	240	D	220	E	240	D	< 1.0

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

(1) = SAMPLES WERE DILUTED BY THE NUMERICAL VALUE DISPLAYED.
DETECTION LIMITS HAVE BEEN INCREASED BY THE SAME FACTOR.

D. Rick Davis Vice President

Elab



Client: PECO #23867.001 Date Reported: 11/23/04

ELAB SAMPLE NUMBER			SI	3LK1111B1	04	111100-01	04	111100-02	0	411100-	03	04:	11100	-03D
DATE SAMPLED			-	NA	- 	L1/09/04	- 1 1	1/09/04	- - 	11/09/0	4	 1:	- - 1/09/	04
DATE RECEIVED				NA] 1	1/10/04] 1	1/10/04	İ	11/10/0	4	1:	1/10/	04
DATE ANALYZED			3	1/16/04	3	11/16/04	1	1/16/04	1	11/16/0	4	1:	1/17/	04
CLIENT SAMPLE DESCRIPTION			-	M.BLANK	- 	MW-2	· 	MW-4	- - 	DUP1109	04	Dt	JP110	904
CELENT OFFILE PROCEETION			 - -											
BASE NEUTRAL ORGANICS	Ţ								- I - 			2	2.0	 X(1)
BY USEPA METHOD 8270	1	EQL		CONC	1	CONC	ļ	CONC	Ì	CONC	į		CONC	į
Acenaphthylene		5.0	- <	5.0	 	5.4	 <	5.6	- - 	1.1	 J		1.2	 cr
2-Methylnaphthalene	-	5.0	<	5.0	<	5.4	<	5.6	İ	6.5	i	<	11	. D
Naphthalene	I	5.0	<	5.0	<	5.4	1	2.2	Ţĺ	120	E		160	D

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

(1) = SAMPLES WERE DILUTED BY THE NUMERICAL VALUE DISPLAYED. DETECTION LIMITS HAVE BEEN INCREASED BY THE SAME FACTOR.



Client: PECO #23867.001 Date Reported: 11/23/04

ELAB SAMPLE NUMBER			0411100-0	4	0411100	-04D
	-		-			
DATE SAMPLED			11/09/04		11/09/	04
DATE RECEIVED			11/10/04		11/10/	04
DATE ANALYZED			11/17/04		11/17/	04
			-			
			MW-5		MW - 5	5
CLIENT SAMPLE DESCRIPTIO	N					İ
			1			ļ
			·			·
BASE NEUTRAL ORGANICS				- 1	2.0	X(1)
BY USEPA METHOD 8270		EQL	CONC	!	CONC	: !
			-			
Acenaphthylene	l	5.0	1.3	J,	1.3	JD
2-Methylnaphthalene	- 1	5.0	7.8		7.9	JD
Naphthalene		5.0	130	E	170	D
						- 1

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

(1) = SAMPLES WERE DILUTED BY THE NUMERICAL VALUE DISPLAYED. DETECTION LIMITS HAVE BEEN INCREASED BY THE SAME FACTOR.

D.KB/7

Elab



Client: PECO #23867.001 Date Reported: 11/22/04

ELAB SAMPLE NUMBER		V3BLK1117	0411121-01	0411121-02D	0411121-03D	0411121-04
DATE SAMPLED		NA	11/10/04	11/10/04	11/10/04	11/10/04
DATE RECEIVED		NA	11/11/04	11/11/04	11/11/04	11/11/04
DATE ANALYZED		11/17/04	11/17/04	11/17/04	11/17/04	11/17/04
		M.BLANK	 MW-12	 MW-13	 MW-14	 Trip Blank
CLIENT SAMPLE DESCRIPTION		1	1	1	1	#2974
					1	1
VOLATILE ORGANICS				10 X(1)	100 X(1)	
BY USEPA METHOD 8260	EQL	CONC	CONC	CONC	CONC	CONC
		-			1	
Benzene	1.0	< 1.0	1.1	650 D	9400 D	< 1.0
Ethylbenzene	1.0	< 1.0	0.69 J	360 D	680 D	< 1.0
Toluene	1.0	< 1.0	< 1.0	26 D	13000 D	< 1.0
Xylene(total)	1.0	< 1.0	0.27 J	520 D	2600 D	< 1.0

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

(1) = SAMPLES WERE DILUTED BY THE NUMERICAL VALUE DISPLAYED. DETECTION LIMITS HAVE BEEN INCREASED BY THE SAME FACTOR.

Elab



Client: PECO #23867.001 Date Reported: 11/23/04

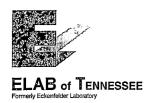
ELAB SAMPLE NUMBER			SE	3LK1112B1	04	11121-0	1 04	11121-0	02 0	411121-	02D	0411121-	03
DATE SAMPLED		· ,	-	NA	 1	L1/10/04		11/10/04	· - · · :	 11/10/0	4	11/10/0	 4
DATE RECEIVED			1	NA	1	1/11/04	1	1/11/04	. :	11/11/0	4	11/11/0	4
DATE ANALYZED			1	1/12/04	1	L1/13/04	1	11/13/04	. :	11/17/0	4	11/13/0	4
CLIENT SAMPLE DESCRIPTION	ON .		- 	M.BLANK	 	MW-12	 	MW-13	- 	MW-13	 	MW-14	
BASE NEUTRAL ORGANICS	 !		- 	· 	 				!	2.0 X	 (1)		
BY USEPA METHOD 8270	 	EQL	 -	CONC	 	CONC	 l	CONC	 	CONC		CONC	
Acenaphthylene	1	5.0	<	5.0	<	5.4	<	5.3	<	10	D	< 5.1	
2-Methylnaphthalene	ı	5.0	<	5.0	<	5.4	1	43		48	D	120	E
Naphthalene	- 1	5.0	<	5.0	1	2.2	JΪ	150	Εļ	200	D	220	E

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

(1) = SAMPLES WERE DILUTED BY THE NUMERICAL VALUE DISPLAYED. DETECTION LIMITS HAVE BEEN INCREASED BY THE SAME FACTOR.



Client: PECO #23867.001 Date Reported: 11/23/04

ELAB SAMPLE NUMBER			0411121-03D
			-
DATE SAMPLED			11/10/04
DATE RECEIVED			11/11/04
DATE ANALYZED			11/17/04
			-
1			MW-14
CLIENT SAMPLE DESCRIPTION	N		
1			1
BASE NEUTRAL ORGANICS	ì		5.0 X(1)
BY USEPA METHOD 8270	- !	EQL	CONC
			-[
Acenaphthylene	i	5.0	< 26 D
2-Methylnaphthalene	1	5.0	150 D
Naphthalene]	5.0	360 D

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

(1) = SAMPLES WERE DILUTED BY THE NUMERICAL VALUE DISPLAYED. DETECTION LIMITS HAVE BEEN INCREASED BY THE SAME FACTOR.

Elab



Client: PECO #23867.001 Date Reported: 11/23/04

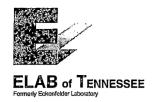
ELAB SAMPLE NUMBER			V	3BLK1117	04	11139-01	04	11139-02	04111	.39-03D	04	11139-0
DATE SAMPLED			 	NA	1 1	1/11/04	 1	.1/11/04	 11/1	1/04	 1	1/11/04
DATE RECEIVED			i	NA	:	1/12/04		.1/12/04		2/04	•	1/12/04
DATE ANALYZED			1	1/17/04	:	1/17/04		1/17/04	•	7/04	•	1/17/04
		- -	 	M.BLANK	 Tr	ip Blank	 	MW-11	 MW		 E	 B111104
CLIENT SAMPLE DESCRIPTION	N				1	#2975						
			! 		! 		 		 		 	
VOLATILE ORGANICS	J		İ		İ		İ		10	X(1)	İ	
BY USEPA METHOD 8260	1	EQL]	CONC	ļ	CONC		CONC	co	NC	!	CONC
Benzene		1.0	 <	1.0	 <	1.0	 <	1.0	- 110	0 D	 <	1.0
Ethylbenzene	ĺ	1.0	<	1.0	<	1.0	<	1.0	34		<	1.0
Toluene	i	1.0	<	1.0	<	1.0	<	1.0	160	0 D	<	1.0
Xylene(total)	ĺ	1.0	<	1.0	<	1.0	<	1.0	11	0 D	<	1.0

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

(1) = SAMPLES WERE DILUTED BY THE NUMERICAL VALUE DISPLAYED.
DETECTION LIMITS HAVE BEEN INCREASED BY THE SAME FACTOR.



Client: BROWN & CALDWELL-Mid12-NOV-2004 09:00 Date Reported: 11/23/04

ELAB SAMPLE NUMBER			0411139-05
	-		
DATE SAMPLED			11/11/04.
DATE RECEIVED			11/12/04
DATE ANALYZED			11/17/04
	-		
			MW-9
CLIENT SAMPLE DESCRIPTION	1		1
			1
VOLATILE ORGANICS			1
BY USEPA METHOD 8260	1	EQL	CONC
	-		
Benzene		1.0	< 1.0
Ethylbenzene	-	1.0	< 1.0
Toluene	1	1.0	< 1.0
Xylene(total)	1	1.0	< 1.0
			1

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

Dial

Elab



Client: PECO #23867.001 Date Reported: 11/23/04

ELAB SAMPLE NUMBER			SE	LK1115B1	04	11139-02	04	11139-03	04	11139-04	04	11139-05
DATE SAMPLED			- 	NA.	1	1/11/04	1:	 1/11/04	1	1/11/04	1	1/11/04
DATE RECEIVED				NA	1	1/12/04	1:	1/12/04	1	1/12/04	1	1/12/04
DATE ANALYZED			1	1/17/04	1	1/17/04	1 1:	1/18/04	1	1/18/04	1	1/18/04
CLIENT SAMPLE DESCRIPTIO	N 			M.BLANK		MW-11		MW-15	E	B111104	 	MW-9
BASE NEUTRAL ORGANICS	[i		i		i		i		i	
BY USEPA METHOD 8270	I	EQL		CONC		CONC	1	CONC		CONC	1	CONC
Acenaphthylene		5.0	<	5.0		5.3	<	5.3] <	5.4	 	5.3
2-Methylnaphthalene	1.	5.0	<	5.0	<	5.3	<	5.3	<	5.4	<	5.3
Naphthalene	- 1	5.0	<	5.0	<	5.3	1	100] <	5.4	<	5.3

ALL COMPOUNDS EXPRESSED IN MICROGRAMS/LITER UNLESS OTHERWISE NOTED.

ALL NON-DETECT VALUES ARE REPORTED AS <EQL (MODIFIED TO REFLECT DILUTIONS/SAMPLE VOLUME).

SEE ATTACHED PAGE FOR DEFINITIONS OF TERMS AND QUALIFIERS.

Elab



ANALYTICAL REPORT TERMS AND QUALIFIERS

- EQL: The estimated quantitation limit (EQL) is defined as the estimated concentration above which quantitative results can be obtained with a specific degree of confidence. ELAB defines the EQL to be at or near the lowest calibration standard.
- B: The presence of a "B" to the right of an analytical value indicates that this compound was also detected in the method blank and the data should be interpreted with caution. One should consider the possibility that the most accurate sample result might be less than the reported value and, perhaps, zero. The qualifier will be placed on the analyte according to "National Functional Guidelines." The 10x rule will be applied.
- When a sample (or sample extract) is rerun diluted because one of the compound concentrations exceeded the highest concentration range for the standard curve, all of the values obtained in the dilution run will be flagged with a "D".
- E: The concentration for any compound found which exceeds the highest concentration level on the standard curve for that compound will be flagged with an "E". Usually the sample will be rerun at a dilution to quantitate the flagged compound.
- J: The presence of a "J" to the right of an analytical result indicates that the reported result is estimated. The chromatographic data pass the identification criteria showing that the compound is present, but the calculated result is less than the EQL.
- P: The associated numerical value is an estimated quantity. There is greater than a 40% difference between the two GC columns for the detected concentrations. The higher of the two values is reported.



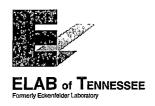
CLIENT: B&C-PECO Quarterly GW #23867.001

DATE RECEIVED: 11/10/04 DATE REPORTED: 11/19/04

ELAB SAMPLE NUMBER				0411100-01	0411100-02	0411100-03	0411100-04
CLIENT SAMPLE DESCR	IPTION/SAMPL	ING DATE		MW-2 11/9/04 10:35:00 AM	MW-4 11/9/04 11:35:00 AM	DUP110904 11/9/04	MW-5 11/9/04 12:45:00 PM
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CONC	CONC	CONC	CONC
Arsenic Beryllium Cadmium Lead	5.0 5.0 1.0 3.0	6010B 6010B 6010B 6010B	µg/L µg/L µg/L µg/L	9.9 <5.0 <1.0 8.7	<5.0 <5.0 1.6 <3.0	<5.0 <5.0 <1.0 <3.0	5.3 <5.0 <1.0 <3.0

See attached page for definition of terms and qualifiers.

ELAB



CLIENT: PECO #23867.001

DATE RECEIVED: 11/11/04 DATE REPORTED: 11/23/04

ELAB SAMPLE NUMI	BER			0411121-01	0411121-02	0411121-03
CLIENT SAMPLE DES	SCRIPTION/SAMI	PLING DATE		MW-12 11/10/04 10:45:00 AM	MW-13 11/10/04 11:59:00 AM	MW-14 11/10/04 1:10:00 PM
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CÓNC	CONC	CONC
Arsenic Beryllium Cadmium Lead	5.0 5.0 1.0 3.0	6010B 6010B 6010B 6010B	µg/L µg/L µg/L µg/L	<5.0 <5.0 <1.0 <3.0	6.0 <5.0 <1.0 37	22 <5.0 <1.0 3.3

See attached page for definitions of terms and qualifiers.

ELAB



CLIENT: PECO #23867.001

DATE RECEIVED: 11/12/04
DATE REPORTED: 11/29/04

ELAB SAMPLE NUMB	ER		·	0411139-02	0411139-03	0411139-04	0411139-05
CLIENT SAMPLE DES	CRIPTION/SAMI	PLING DATE	MW-11 11/11/04 10:15:00 AM	MW-15 11/11/04 11:45:00 AM	EB111104 11/11/04 12:05:00 PM	MW-9 11/11/04 12:50:00 PM	
ANALYTES	REPORTING LIMITS	USEPA METHOD	UNITS	CONC	CONC	CONC	CONC
Arsenic Beryllium Cadmium Lead	5.0 5.0 1.0 3.0	6010B 6010B 6010B 6010B	μg/L μg/L μg/L μg/L	<5.0 <5.0 <1.0 <3.0	90 16 <1.0 <3.0	<5.0 <5.0 <1.0 <3.0	<5.0 <5.0 <1.0 <3.0

See attached page for definition of terms and qualifiers.

ELAB



ANALYTICAL REPORT NOTES, TERMS AND QUALIFIERS (INORGANIC)

Notes:

The metals and cyanide reporting limits (RLs) have been statistically determined to be no less than three standard deviations as defined in 40 CFR 136, Appendix B, Revision 1.11. All other reporting limits are referenced from the specific analytical method.

Terms:

NA Not Applicable

NR Not Requested

Qualifiers:

- B The reported value is less than the practical quantitation limit (PQL, project defined) but greater than or equal to the RL.
- E The reported value is estimated due to the presence of matrix interference.
- N Predigested spike recovery not within control limits.
- * RPD or absolute difference for Duplicate analysis not within control limits.
- ** Reference Standard Methods 19th edition.
- (1) pH analyzed outside USEPA specified holding time. pH must be measured immediately after sample collection.
- (2) The sample pH did not meet the preservation guidelines. Therefore the pH was adjusted upon receipt.
- (3) Reference Standard Methods 17th edition for the distillation method.
- (4) The sample was analyzed out of the USEPA holding time.
- (5) The sample was received in the laboratory out of the USEPA holding time.
- (6) The shipping cooler temperature exceeded 6°C upon receipt to ELAB of Tennessee, LLC.
- (7) Analysis was subcontracted

Ship to:	Send Results to:		Send Invoice	e To:	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Details:		
ELAB of Tennessee	Name MINE WATHINS		Name		*	Page	of	
227 French Landing Drive	Company Brown & CALDI	wer L	Company		Cooler N		of	
Suite 550	Address 7 150 Lucorne Do, Su	un 30	Address		_	Date Shipped 11/9/04		
Nashville, TN 37228	City, State, Zip Mion & Succ 1-	FILHEON	City,State,Zi	D D	7		By Fer	
Attn: Analytical Laboratory	Phone 440-826-4910	14413	Phone	1	7_	Simppour		102 E A
(615) 345-1115 (phone)	Fax 440-826-348=		Purchase Oro	der		—— Turnarou	ind Said	NDARD
(615) 846-5426 (fax)	E-mail		E-mail _					ed otherwise / There
								or RUSH-contact lab)
Project No./Name 23867:008	PECO Quaerony Gu)	Samplers (Sign	ature)*/		2/1	MS	S-PCN
Lab Use Only Date Time Lab # Sampled	Comp./ Sample Location/Description Grab	Sample		Field	ANALYS	IS REQUIRED	No. of	Lab Use Only
	Grao	Matrix		Çond.	14-24-		Bottles	Containers/Pres.
1100-0111 9/04/1035	G NW-Z	رسى		1218 M5/2011	ACC. CBLEK	1, EVOC (PAH)	1 4-	ST-HOURITED PHILE
		<u> </u>		" LA 57 W.	METALS (AS	Be, Cd Pb)	1 6 5	1 1000 100 1000 1000 1000 1000 1000 10
11100-07 114/04/135	a nu -4	aco	1,38		1		1, 6	2は~いかりもろ
1011104		<u>uco</u>	1392	0 7 429	 	· · · · · · · · · · · · · · · · · · ·		
03 11 9/04 9999	G- DUP110904	60						
04 119/04/245	a hw-5	an	7.47	,320	1	/	V	
05 119/04 040	TRIP BLANK #2973						2	ZJ-HCLOHZ
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	THEIR DUNNE - 0143	 	+ +		VOC (BY	EX)		201300000000000000000000000000000000000
						<u> </u>		
					· · · · · · · · · · · · · · · · · · ·		†	
		_						
Sample Kit Prep'd by: (Signature)	Date Received By: (Signatur	REA	MARKS				se Only	
12-11	15/ 192 //7/		nature required to	ensure vali	idity		Headspace	Y (N) NA
100 land	109 120	\simeq					Filtered	Y NA .
Relinquished by: (Signature)	Date/Time Received By: (Signatur	re)	•				t Containei pancies	is (Y) N NA Y N NA
Delinovished by (Single)		_				Cust. (Seals intact	
Relinquished by: (Signature) Date/Time Received By: (Signature)		re)				Contai	iners Intact	Y/N NA
								8
Received for Laboratory by: (Signature)	Date/Time / Température				20	Airbill	# FX	
	11-10-06							

Nº 32223

Ship to:	e rans		6 , 8	Send Results to:			Send Invoi	ce To:		Details:	Details:			
ELAB of 227 French I Suite 550 Nashville, TI Attn: Analy (615) 345-11 (615) 846-54	Landing Dri N 37228 tical Labora 15 (phone)	ive	C F	Company Results Address 7756 Lu City,State,ZipMior Phone Y40 - F	Page of					/ There				
Project No./Nar	me 23867	- 008	PEZO	augunoci	4 GW		Samplers (Si	onature)* 🗸	hell.	12		Mes	1	
Lab Use Only Lab#	Date Sampled	Time	Comp./ Grab	Sample Locatio	n/Description	Sample Matrix	Field pH/Temp	Field-Cond.	ANALYSI	S REQUIRED	No. of		Jse Only	
11121-01	11/10/04	1048	G-	niu -	(7	دت	8.16			SVOC (PAH)	Bottles	フルー い	ners/Pres. سود المن ماد د ماد المنا	
1 62	11/10/04		G-	~~~-		000	7.35	ļ	MERGLE CAS	3e,(d,Pb)	<u> </u>	224P	1660 H27 <u>630/H10</u>	
03	11/10/04	1 1	G	mu - 1			1499	0.563		1	1/			
04			G-			60	13,01	1.84		V	V	<u> </u>		
	11/10/04	10	<u> </u>	TRIPBIANK	4 2974				100 (BTE	*	2	ZJ-+	HEL PITLA	
		<u> </u>		 						1				
										· · · · · · · · · · · · · · · · · · ·	·		18	
												opa Silving Si		
Sample Kit Prep	d by: (Signatur	re)	1/5/04	Date Recent	ved By Signan	, 100011	ARKS ature required t	o ensure vali	dity	VOA H	e Only leadspace iltered	ΥĆ	NA NA	
Relinquished by:	(Signature)	<u> </u>		e/Time Receiv	ved By: (Signature	e)			•		Containers	<u>ි</u> ග	N NAC D NA	
Melinquished by:	(Signature)		////o/ oy Date	e/Time Receiv	ved By: (Signature	-				Cust. S	eals intact iers Intact	B	N NA N NA	
Received for Lab	oratory by: (Si	gnature)	1/ /	e/Time Tempe	rature /jD	٥	·			Airbill			90019	

Nº 32225

	Ship to:				Send Resu	lts to:		Send Invoi	ice To:		Details:	•		
Suite 550 Nashville, TN 37228 Attn: Analytical Laboratory (615) 345-1115 (phone) Company Read Company Read Company Read Company Read Read For Suite 3/3 City, State, Zip Mion Education Phone 140-816-3400 Fax 440-816-3400						Phone Shipped E Purchase Order Std. Turnarour E-mail Std. Turn u					of 7 /// by DEY NO4 &D d otherwise / 7 or RUSH-cont	There		
	Project No./Nan	ne 7.2.84	7.00	S D	E (0 /	Dugetery Co	(a)	5 1 (0)	· /		May og p	Surcinary E	r KUSH-cont	act lab)
	Lab Use Only Lab#	Date Sampled	Time	Comp./ Grab	Sample	Location/Description	Sample Matrix	Samplers (Si Field pH/Temp	Field Cond.	ANALYSIS	S REQUIRED	No of Bottles	Lab Use	
	11139-01	11/11/24	04.60		Tupl	BLANK # 2975				UC COT	EX)		Containe Lic Zil- Juli s	
-	02	11/11/24	105	u	MW-11	us/msD	GW	9.69	1-03	METALS (As, E	SE CH PL)		537-11 2115-111	CIPHA
-	1	11/1/04	1145	<u> </u>	mw	-15	20	7,23	1.80			6	(2H-cm)	
-		111104	1205		EB	111104	WATER		-			6		
-	05	11/11/04	1250	6	mu	v -9	au	8.70	0.547		/	6		3 3 (1)
ŀ											·		γ	
ŀ							 	·			· · · · · · · · · · · · · · · · · · ·	ļ		
ŀ								<u> </u>	·- ·-	F		ļ		
-										,	· · · · · · · · · · · · · · · · · · ·	ļ		
	Sample Kit Prep	lilly	re)	15/04	Date 1430	Received By. (Signatur		ARKS ture required t	o ensure vali	dity	. VOA i	se Only Headspace	y Q	J NA
	Relinquished by:	(Signature)		Dat	e/Time	Received By: (Signatur	re)				Correct Discre	t Containers pancies		NA NA NA
	Rollinguished by:				e/Time	Received By: (Signatur	re)					Seals intact ners Intact		NA NA 00002
	Received for Labo	or alphy by: (Si	gnature)	11-12	e/Time	Temperature 7				•	Airbill	# <u>- </u>	<u>(</u>	



LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

110 Commerce Drive Well Number: M W - ユ Allendale, NI 07401 Sample I.D.(s): $M W - \lambda$ (if different from well no.) Date: \\/9/04 Time: 0945 Project: 23867.000 Weather: SunAN Air Temp.: 10W 503 Personnel: MPC IJLM **WELL DATA:** DEPTH TO: Static Water Level: 4, 10 ft Bottom of Well: 13.31 ft Screen Length: 10 ft DATUM: Top of Protective Casing Top of Well Casing Other: CONDITION: is well clearly labeled? ☐ Yes ☐ No. Is prot. casing/surface mount in good cond.? (not bent or corroded) A Yes ANO Does weep hole adequately drain well head? Thes I No Is concrete pad intact? (not cracked or frost heaved) ☐ Yes ☐ No WA Is padlock functional? ☑ Yes ☐ No ☐ NA ☐ Is inner casing intact? ☑ Yes ☐ No Is inner casing properly capped and vented? Thes I No **PURGE DATA:** Pump: Pump Type Pers Tubing: Material: Roll Inner Diameter: 3/Q in. Distance from well to flow cell: ________ ft Purge Depth: 11 ft. Avg. Pumping Rate: 20 mL/min Elapsed Time: 30 min Volume Pumped: 65 gal Was well evacuated? ☐ Yes ☐ No Dedicated Purging Equipment: □ Prepared Off-Site □ Field Cleaned SAMPLING DATA: Tubing: Material: PO/N Inner Diameter: 3/8 in. ☐ Dedicated ☐ Prepared Off-Site ☐ Field Cleaned Sampling Equipment: Sampling Depth: _____ft. Sampling Pumping Rate: \$\mathcal{D}() mL/min Metals samples field filtered? ☐ Yes ☐ No Method: _____ Filter Size: _____ Appearance: ☐ Clear ☐ Turbid ☐ Color: ____ ☐ Contains Immiscible Liquid Field Determinations: pH: 0.00 Temp: 12.00°C ORP: -46 mV Cond: 128 DO: Turbidity: OO-7 NTU Meter Model: Horrish (12) Meter S/N: 03828 QA/QC Information: Duplicate Yes No Duplicate ID: NAMS/MSD ID: NAMS MS/MSD II Yes II No MS/MSD II Field Blank ID: 2973 MP (if applicable) Trip Blank ID: 2473 Fe: NA Mn: NA S: NA CO2: NA Hach Kit Results: CI-: _ N.A-Laboratory Analysis: VOC, SUOC, Metals (As De Col, Be Ph) No. of Containers: 6 Sample Time: 103 This data sheet must be filled in completely and correctly at time of sampling (specify NA when not applicable). I certify the information provided is accurate and the sample was collected in accordance with applicable regulatory and project protocols.

Date: 11/9/84

Signature: /

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Personne Purge/Sa	£,\$7.008	12400							
tart casz	1		 	,	 	,	 	·	
Actual Time	pH	Temp (°C)	ORP (mV)	Cond	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1	ļ <u>`</u>				(g /				Gomments
0936	6.65	15.61	19_	,232	3.69	175	9,41	140	
0.02	7.37	12.68	-15	.234	1.02	120	9.96	90	· · · · · · · · · · · · · · · · · · ·
کان _{میدا}	7.67	1202	~33	229	0.28	103	10.00	SO	
1011	7.79	13.21	~39	・ムイズ	90	117	10.02		
1014	7.90	13.46	-41	219	. 7 .5	95.6	10.10	80	·
1017	7.90	13,00	-42	1220	.80 .91	90,4	10.00	20	
1017 1020 1023 1026 1024	7.93	13.54	-44	216	86	\$1.4	10.10		
1023	18.02	13.47	-46	217	14 1	77.2	10.15		
1026	8.00	17:00	-46	218	189	SO.7	10.13	SC	
105,		 	<u> </u>					_	
1035				<u> </u>				"	
1.0		,							
	ļ								
	1	·	1		-				· · · · · · · · · · · · · · · · · · ·
	i 								
									-> ~
							PW.	er D	1035
	ļ						4		
ļ	-								
	<u> </u>					91	_		
						\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	,		
							<i>7</i>		
							$\overline{}$		
	 			-					
						·			
	ļ				-				
<u></u>									
<u> </u>	 		-						
					-				



LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

110 Commerce Drive Allendale, NJ 07401	Well Number: $M W^{-L}/$ Sample I.D.(s): $M W^{-L}/$ (if different from well no.)
Project: D-X67 PE (O) Personnel: MPC/JLM	Date: 11/9/04 Time: 11 00 Weather: 5444 Air Temp.: 10.505
WELL DATA: Casing Diameter:in. Casing Material:intake Diameter:in. Intake Material: DEPTH TO: Static Water Level:	ell: <u>1식 5속</u> ft Screen Length: <i>t()</i> ft
CONDITION: Is well clearly labeled?	JYes □ No aved) □ Yes □ No / U A Js.inner casing intact? □ Yes □ No
PURGE DATA:	
Pump: Pump Type Perish (C) Manufacturer: Manufacturer:	Coluis † Model Number: 03647
Distance from well to flow cell:	-
Purge Depth: ft. Avg. Pumping Rate: mL/min El Was well evacuated?	apsed Time: <u>3()</u> min Volume Pumped: <u>F</u> gal
Purging Equipment: Dedicated Departed C	Off-Site ☐ Field Cleaned
SAMPLING DATA:	
Cooling Shroud? Yes No	Ealvist Model Number: 03647
Tubing: Material: 120 (1) Inner Diameter	: <u>*{}</u> in.
Sampling Equipment: Dedicated Departed O	2.1 ·
Sampling Depth: 6.5 ft. Sampling Pumping Rate:	<u>U</u> mL/min
	Filter Size:
Appearance:	
DO: Turbidity:	RP: <u>^ プ}</u> mV Cond: <u>【479 ^M/ と M</u> <u>は 子</u> NTÚ ter S/N:
MS/MSD □ Yes □ No M	uplicate ID: NA S/MSD ID: NA A S/MSD
CI-:	s: <u>NA</u> co ₂ : <u>NA</u>
Laboratory Analysis: 100 800 Metals (2) No. of Containers: 6 Sample Time: 1123	b, Be, Col, Ax
This data sheet must be filled in-eempletely(and correctly at time of sampling (sp	
certify the information provided is accurate and the sample was collected in acc Signature:	ordance with applicable regulatory and project protocols. Date:\\ / - G / O \

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project N	ame: <u>1</u>	>> CO	Çe.		Pro	oject Numbe			
Personne	el: 🎊	76/5	LM		We	oject Numbe ell ID:/_	_		
Purge/Sa	mple Depl	h: 🏂	32 12		San	nple ID: 📝	NW-4		- -
8.25	esternt!	Con the two	SC .	•					
	65° A.						 	T	
Actual	. F	Temp	ORP	Cond	DO	Turbidity	DTW	Pumping Rate	
Time	pH .	(°C)	(mV)	(Vicin)	(mg/L)	(NTU)	(ft)	(mL/min)	Comments
1102		1							
1105	7.82	15.34	7	1484	3.59	17	9.09	160	
1103	7.48	14.39	15	,491	12.65	119	9.14	90	
11 11	7.31	13,40		.489	2 (8)	105			
11/4	7.36	13.57	19	1482	2.48	96.6	9.26	110	
1117	7.37	13.52	12	1486	2,29	91,2 31,2	9.30	110	
1117	7.42	13.42	-a	482	1.10	704	Q HA		
(12)	7.41	14.31	-15	.483	38	601	940	1/0	
1126	7.32	13.8x	-20	1485	. 92 1.55	60.1 58.9	9.46 9.47 9.47		
1129	7.31	14.05	~21	489	1,55	36.0	9.47		
1137	7.33	13,42	273	1479	239	54,7	9.47	110	
	ļ.,								
		<u> </u>							
1	-			·					
								····	
					L			e >10d	() 1135
								Sampled	<u> </u>
									
<u> </u>									
<u>·</u>				\			_,		
·									
 ;						-y			
					\ \\	(a /			*
						1/00			
						7			
						2			
				V	MY				
					-19	•			
							-		
						· · · · · · · · · · · · · · · · · · ·			
	-							\	
							·		
									
								$\overline{}$	
									\

refer to the first figure and the second of the first figure and the second of the sec	
the control of the co	
 The latter of the state of the	
	4
The late to a second section of the second section in the second section in	7.0
index in the state of the supplication of the state of th	

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

	SAMPLING FIELD DATA
110 Commerce Drive	Well Number:
Allendale, NJ 07401	Sample I.D.(s): (f different from well no.)
Project: 75(0) 23867 Personnel: MPC/JLM	Date: 11-9-04 Time: 12-09 Weather: Air Temp.: 1200 So
WELL DATA: Casing Diameter:in.	Star Star
CONDITION: Is well clearly labeled?	lved) □ Yes □ No N A Is inner casing intact? □ Yes □ No
PURGE DATA:	
Pump: Pump Type	Solvist Model Number: 03647
Tubing: Material: Inner Diameter:	: _ <u>}}</u> in.
Distance from well to flow cell:ft	
Purge Depth: 13 ft. Avg. Pumping Rate: mL/min Eli	apsed Time: <u>30</u> min Volume Pumped: <u>, 9</u> 5gal
Was well evacuated?	
Purging Equipment: Dedicated Prepared O	ff-Site □ Field Cleaned
SAMPLING DATA:	
Cooling Shroud? U Yes D No	Solvist Model Number: 03647
Tubing: Material: 1011 Inner Diameter:	: <u>¾2</u> in.
Sampling Equipment: Dedicated Prepared C	Off-Site
Sampling Depth: 13 ft. Sampling Pumping Rate:	_mL/min
Metals samples field filtered? ☐ Yes ☑ No Method: _	Filter Size:
Appearance: 🔲 Clear 🗆 Turbid 🗅 Color:	☐ Contains Immiscible Liquid
DO: 214 Turbidity: 13	RP: <u>-44</u> mV Cond: <u>.520 ^{MS}/CM</u> (NTU er S/N: <u>() 28 2 §</u>
MS/MSD ☐ Yes ☐ No M	plicate ID: DUP 110904 S/MSD ID: WA Dlicable)
Hach Kit Results: Fe: WA Mn: Mn: A	s: co ₂ :
Laboratory Analysis: <u>Vo(、くいさ)、Metels(As, (</u> No. of Containers: <u>ら</u> Sample Time: <u>」ン⁴⁵</u>	-cl, Be, Pb)
This data sheet must be filled in completely and correctly at time of sampling (spe	
I certify the information provided is accurate and the sample was collected in accurate and the sample was collected and the sample wa	ordance with applicable regulatory and project protocols. Date:/

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: PECO	Project Number: 2386 7
Personnel: MPC/JAM	Well ID:
Purge/Sample Depth:	Sample ID: _∠ν ພ → >
TH 1504	

	3.43					1			
Actual Time	pН	Temp (°C)	ORP (mV)	Cond (A5/CA)	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
1700	7.95	15.15	-63	308	12.82	09.5	9,20	120	· · · · · · · · · · · · · · · · · · ·
115 11	7,93	13.34	-42	320	15.4x	73.4	9.18	1.20	
1	7.60	13.10	-43	BIK	15:67	725	9.13	ل در	
1217	7.51	12.34	-41	321	10.73	68.1	9.19		Sishioolor
120	7.47	11.95	-39	1321	8.46	66.2	9.20		- 121712
1223	7.59	12.90	-30	.314	5.07	905	920	120	
1217 1220 1223 1226 1226 1226 1232 1232	7.5+	12.58	-30 -37	n 318	4.05	107	9,20		
124	7.49	12.95	-38	.316	3.29	106	,	12()	
1232	748	13.12	-40	.318	2.71	119	9,16		
1235	7.47	13.17	-43	. 319	2.38	130	9.16	1760	
1733	7.47	13.45	-44	32.0	2.14	131	9.16		
120	,								
					į.				
				<u> </u>		<u> </u>			
							·		
				<u> </u>		1			
								ار المسيح المناط	@ 1245
								المناه	0904
·	:								
							_		
				,	<i>y</i>				
					/_/_				
					9/04		_		
·					10				
						1			
									·
ļ				7/2					
	_			19					
ļI		,	V	1					
ļ									
<u> </u>									
 									
ļ									
<u> </u>		i				11			

BROWN AND CALDWE

LOW-FLOW GROUNDWATER

SAMPLING FIELD DATA 110 Commerce Drive Well Number: MW- 9 Allendale, NJ 07401 Sample I.D.(s): Date: 11 11 04 Time: 12:00
Weather: Partly Sunny Air Temp.: 54 Project: Peco Quartely GWS Personnel: [KAG, JLM WELL DATA: Casing Diameter: 4 in. Casing Material: 7 V C Intake Diameter: ____in. Intake Material: __ DEPTH TO: Static Water Level: 11.06 ft Bottom of Well: 16.84 ft Screen Length: 10 ft DATUM: Top of Protective Casing Top of Well Casing Other: Is prot. casing/surface mount in good cond.? (not bent or corroded) 🗶 Yes 🛘 No Does weep hole adequately drain well head?

☐ Yes ☐ No Is concrete pad intact? (not cracked or frost heaved) ☐ Yes ☐ No Is padlock functional? Yes \(\sigma\) No \(\sigma\) NA \(\sigma\) Is inner casing intact? Yes \(\sigma\) No ls inner casing properly capped and vented? Yes \(\sigma\) No **PURGE DATA:** Pump: Pump Type PEOI Manufacturer: Solinist Model Number: _____ Model Number: _____ Tubing: Material: 18 in. Distance from well to flow cell. ft Purge Depth: 148 ft. Avg. Pumping Rate: 160 mL/min Elapsed Time: 36 min Volume Pumped: 15 gal Was well evacuated? □ Yes 💢 No Purging Equipment: Dedicated ☐ Prepared Off-Site ☐ Field Cleaned SAMPLING DATA: Pump: Pump Type | Name Type | Manufacturer: Solines | Model Number: Cooling Shroud? ☐ Yes ☐ No Tubing: Material: 10 ly Inner Diameter: 38 in. Sampling Equipment: Dedicated Departed Off-Site Deficience Sampling Depth: 10.90 ft. Sampling Pumping Rate: 160 ml/min Metals samples field filtered? □ Yes 🔀 No Method: _____ Filter Size: _____ Clear Turbid Color: Contains Immiscible Liquid Appearance: Field Determinations: pH: 8.3 Temp: 16.5 °C ORP: 31 mV Cond: 0.547

DO: 1.42 Turbidity: 43.8 NTU Meter Model: Horiba 4-22 Meter S/N: 03828 QA/QC Information: Duplicate Yes No Duplicate ID: N/A

MS/MSD Yes No MS/MSD ID:

Field Blank ID: KB-11104 (if applicable) Trip Blank ID: 2975 Fe: N/A S: N/A CO2: N/A Hach Kit Results: CI-: NTA Laboratory Analysis: VOC SUDC METALS (As, (d, Pb, Be)

No. of Containers: 12 Sample Time: 12:50 This data sheet must be filled in completely and correctly at time of sampling (specify NA when not applicable).

Rev 02/03/04

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: PECO QUARTERLY GWS	Project Number: 23867.008
Personnel: IRAG, JLM	Well ID: MW-9
Purge/Sample Depth:	Sample ID: <u>Mw- 9</u>

		(<u> </u>		T	
Actual		Temp	ORP	Cond	DO	Turbidity	DTW	Pumping Rate	
Time	pН	(°C)	(mV)	H Spin	(mg/L)	(NTU)	(ft)	(mL/min)	Comments
12:18	8.42	15.37	-31	0.001	6.18	164	11:08		
21	8.35	15.71	~35	0-571	3.82	154	11:15		* * * * * * * * * * * * * * * * * * * *
24	8.33	16.29		0.576	2.91	62.8	11.18		,
27	8.30	16.40	_21	.578	2.92	56-1	7.7	160 M/m	
30	8.29	16.45	-16	.574	2.07	60,7	11.18	1-3	
33	8.27	16.64	-11	.567	1.67	50.9	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
36	8.27	16.54	-20	.561	1.39	51.0	,		
34	8.28	16.51	-24	. 555	1.29	47.7	11.18		
42	8.29	16.67	-27	-552	1.4)0	46.6	 		
	8.29	16.74	-28	.552	1.40	451	11.18		
48	Ŷ.30	16.52	-30	.552 .549	1.50	42.9			
51	8.30	16.53	-31	547	1.42	43.8	i1. 18	1	SAMOLE
	<u> </u>	70.5		1.7 7		7 5 0			@ 12:50
									12000
 									
-					•				EB-111104
									@ 12.05
							/		72.03
			,			1	 		
						0		 	
					<u>-</u> iy	7			
	· · · · · ·				- W				
					/ '-				
			/						
				14/	-	 			
-			1 1 1			-			
		//	VA					 .	
<u> </u>		//				<u> </u>	<u> </u>		
 	<u></u>	17							- · · ·
			/		-	1			
 			′				-		
 						1			
 					1		-		
 				-					<u> </u>
 									
 	/				-				· · · · · · · · · · · · · · · · · · ·
 	/								
 / 									
 									
 / 			 	. `					
L_/							L		



LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

110 Commerce Drive	Alt A
	Vell Number: $\underline{\mathcal{M} \mathcal{W}^{-1}}$
	Sample I.D.(s):(if different from well no.)
Project: 1800 QUARTERLY GUS	Date: 11/11/04 Time: 09:30
	Veather! PARTLY SURMY Air Temp.: 47
WELL DATA:	
Casing Diameter: <u>4</u> in. Casing Material: <u>57ルメ</u> S	Tee/
Intake Diameter: 1 in. Intake Material: (ALB STA	<u> </u>
DEPTH TO: Static Water Level: 13.3/ ft Bottom of Well	: 16.81 ft Screen Length: 10 ft
DATUM: Top of Protective Casing Top of Well Casing	□ Other:
CONDITION: Is well clearly labeled? ★Yes □ No	
ls prot. casing/surface mount in good cond.? (not	bent or corroded) to Yes □ No
Does weep hole adequately drain well head?	
Is concrete pad intact? (not cracked or frost heave	
Is padlock functional? ☐KYes ☐ No ☐ NA Is inner casing properly capped and vented? ☐Y	is inner casing intact? ×Qi yes Li No 'es □ No
PURGE DATA:	274 - 1
Pump: Pump Type PERISCALTIC Manufacturer: S Cooling Shroud? □ Yes □ No	
Tubing: Material: Phy Inner Diameter:	3/8 in.
Distance from well to flow cell: 2.5 ft	
Purge Depth: 14.5 ft. Avg. Pumping Rate: 160 mL/min Elap	sed Time: 30 min Volume Pumped: 1/2 2 gal
Was well evacuated? ☐ Yes ☒ No	
Purging Equipment: 💆 Dedicated 🛚 Prepared Off	-Site 📮 Field Cleaned
SAMPLING DATA:	
Pump: Pump Type VEXIS CALTIC Manufacturer: SI	Model Number: 03647
Cooling Shroud?	
Tubing: Material: Inner Diameter:	<u>'3/8</u> in.
l v v	-Site □ Field Cleaned
Sampling Depth: <u>14.5</u> ft. Sampling Pumping Rate: <u>160</u>	n∐min
Metals samples field filtered? 🔲 Yes 💢 No Method:~	Filter Size:
Appearance: 🛣 Clear 🗅 Turbid 🖵 Color:	
Field Determinations: pH: 8 69 Temp: 15,24°C ORF	-
DO: Turbidity: 8%.5 Meter Model: Ho 21BA 4-22 Meter	NTU OS O
Meter Model: Ho 21BA 4-22 Meter	S/N: 63828
QA/QC Information: Duplicate 🗆 Yes 🛣 No Dupl	icate ID: <u>////A</u>
MS/MSD 💢 Yes 📮 No MS/	MSD ID: MW-II
Field Blank ID: NA (if appli	cable)
Trip Blank ID: 2975	14
Hach Kit Results: Fe: W/A Mn: N/A	S: NA CO_2 : NA
<u> </u>	$(\mathfrak{I},\mathfrak{I},\mathfrak{I})$
Laboratory Analysis: VOC, SVOC, METALS, CAS CA	, De, 16)
No. of Containers: 18 Sample Time: 10.15	·
This data sheet must be filled in completely and correctly at time of sampling (speci	fy NA when not applicable).
I certify the information provided is accurate and the sample was collected in according to the sample was collected to the sample was collected to the sample was collected to the sample was collected	dance with applicable regulatory and project protocols. ate:
P:\^Departments\00008.j20(Geoservices)\SOPs\Groundwater_Sampling\LowFlowGW_020304.XLS	Rev 02/03/04

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: PRCC	QUARTERLY GWS	Project Number: 23867008
Personnel: RAG.	JIM 7	Well ID: HW-11
Purge/Sample Depth:	14.50	Sample ID: M W - /I

			,	T				, _ · · · · · · · · · · · · · · · · · · 	,
Actual		Temp	ORP	Cond	DO	Turbidity	DTW	Pumping Rate	
Time	pН	(°C)	(mV)	H Sex	(mg/L)	(NTU)	(ft)	(mL/min)	Comments
49.25	001	1 72	-118	1.03	1 70	81.7	12 24	1124//	
09:30	8.76	15.33	~119		1.78		13.29	160 HL/m	
09:33	8.64	15.35	-117	1.03	0.22	74.0	(7). 31		
36	8 66	15.27	-117	1.03	0.11	74.9	13.31		
39	8.63		-118	1.03	0.00	77.0	<u> </u>	160 ML/M	
1/2	8,69	15.17	- 118	1.03	0.00	77.5	13.31	160 192/11	
45	8.69	15.06	-118	1.03	0	73.1	, ,,,,,		
51	8.69	15.14	-118	1.03	0	86.0	 		
54	8.69	15-20	-118	1.03	Ö	85.7	13.31		
54 57	8.69	15.24	-119	1.03	O	86.5	13.31	160 MLM	
60	A		-	7. 0.2		<u> </u>	12 3.	1000	
	·								/
									NS/MSD
									77,
						/	V /		SAMPLE TIME
							V		@ 10:15
						1/ ///	7		
]					77' /			
				11		,			
	<u></u>			//	` `				,
				-					
	<u> </u>								
									
	1		<u> </u>						
	ļ	ļ							
	ļ						· 		•
<u> </u>	<u> </u>								
	<u> </u>		ļ	<u>. </u>					
	 								-
ļ	ļ						ļ		
	 	 	-	· · · · ·			[
	 			· ·	-				· · · · · · · · · · · · · · · · · · ·
	 	 	 			<u></u>	ļ		
	<u> </u>	 	ļ				<u> </u>		
	 		 	 	-		 		
<u> </u>	 	 	 	 	,				
	<u> </u>	 	 			· · · · · · · · · · · · · · · · · · ·	ļ		
1 .	1	I	l .	I	l l		1	I	. !



LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

110 Commerce Drive	Well Number: <u>MW - 12</u>
Allendale, NJ 07401	Sample I.D.(s):(if different from well no.)
Project PECO Quartily City	Date: 11 - 10 - 011 Time: 10 : 05
Project: PECO QUARTERLY GIN Personnel: RAG, SLM	Date: <u>// -10 - 04</u> Time: <u>/0.05</u> Weather: <u>Strany</u> Air Temp.: <u>55</u> ° F
WELL DATA:	1
Casing Diameter: 4 in. Casing Material: 5000000	88
Intake Diameter: 6 in. Intake Material: 37000	
DEPTH TO: Static Water Level: 11. 90 ft Bottom of We	
DATUM: Top of Protective Casing Top of Well Casing	g U Other:
CONDITION: Is well clearly labeled? Yes No	at hant or complete NA Voc. DN
ls prot. casing/surface mount in good cond.? (no Does weep hole adequately drain well head? ⊠	
Is concrete pad intact? (not cracked or frost hea	ived) ÈX Yes □ No
ls padlock functional? A Yes □ No □ NA	
ls inner casing properly capped and vented?	Yes ☐ No
PURGE DATA:	- C 7
Pump: Pump Type Project Staltie Manufacturer: Cooling Shroud?	33/nust Model Number: 03647
Tubing: Material: By 2 below Inner Diameter:	3/2 .
	. <u>/ </u>
Distance from well to flow cell:ft	- 22
Purge Depth: 16.7 ft. Avg. Pumping Rate: 160 mL/min El	apsed Time: <u>3.3</u> min Volume Pumped: <u>(.7</u> gal
Was well evacuated? 🔲 Yes 🕱 No	
Purging Equipment: 💆 Dedicated 🗅 Prepared C	off-Site
SAMPLING DATA:	
Pump: Pump Type Ref Manufacturer:	Solums Model Number: 03647
Cooling Shroud? Yes No	
Tubing: Material: 764 Inner Diameter	: <u>//</u> in.
Sampling Equipment: 🗷 Dedicated 💢 Prepared C	Off-Site Field Cleaned
Sampling Depth: 14.00ft. Sampling Pumping Rate: 160	
Metals samples field filtered? 🛛 Yes 🛣 No Method: _	Filter Size:
Appearance: Clear 🛭 Turbid 🖵 Color:	□ Contains Immiscible Liquid
Field Determinations: pH: <u>8.16</u> Temp: <u>17.01</u> °C OI	RP: <u>-43</u> mV Cond: <u>0.478</u>
DO: 1.08 Turbidity: 1.3	
-	rer S/N: <u>03828</u>
·	iplicate ID: MASD ID: MASS
	plicable)
Trip Blank ID: WA 29.14	· · · · · · · · · · · · · · · · · · ·
Hach Kit Results: Fe: WA Mn: WA	S: N/A CO2: N/A
CI-: 1/A	,
	cd Be Pb)
No. of Containers: 6 Sample Time: 10:45	
This data sheet must be filled in completely and correctly at time of sampling (sp	
certify the information provided is accurate and the sample was collected in acc	ordance with applicable regulatory and project protocols. Date:

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name:	PECO	QUARTERLY	Project Nu	ımber:	_
Personnel:	-RAG	JLM 7	Well ID: _	MW-12	
Purge/Sample [Depth:/	4.60	Sample ID:	MW-12	_

	, ·	, ,			· 		r		
A -41]	Tamm	ORP	Cond	DO -	Turbidity	DTW	Pumping Rate	
Actual		Temp (°C)	(mV)	()	(mg/L)	(NTU)	(ft)	(mL/min)	Comments
Time	pH !	(-0)	(1117)		(Ing/L)	(1410)	(10)	(11123111111)	
10.10	8.00	16.95	-13	0. 449	2,26	1341.	12.03	 -	
10:13	7.96	17,22	-22	0.457	0.98	29.4	12.05		
10.16	9.10	16.85	-32	.467	c.@9	19.3	12.03		
10.19	8.07	17.19	-34	.470	1.23	5-0	12.03	160 ML/M	
10.22	8.14	13-09	46	.471	1.35	8.2	12.03	,	
16:25	8-14	17.07	-40	0472	1.35	2.3	1203	160 MM	
10:28	8.16	17.28	-43	.470	1.29	2.3	12:03		
10:31	8-17	17.04	-38	0473	1.10	1.6	12.03	1/2 //2	<u> </u>
10:34	8.17	17.01	-43	2476	1.15	1.4	12.03	160 M/M	<u> </u>
10:37	4.18	17.05	-43	-475	1.08	1.9	(n 0.2	 -	<u> </u>
	8.16	17.01	-43	.478	1.08	1-8	12.03	·	
10:45	ļ	 					/	<u></u>	
			<u> </u>						<u></u>
	 		ļ		1	111			
			ļ			0.4	-		
	 				101		 		
	 			1/1	1111		 		,
				1/12	1				
				LHY					
				1					
								1	5 AMPL TIME 10:45
									10:45
		1			<u> </u>			(M)	
		-			<u></u>			A,	
					<u></u>				<u> </u>
		<u> </u>					·		
		ļ					 		<u> </u>
	/_	ļ			ļ				
	<u>/</u>	ļ		<u> </u>			 		
	ļ <u>.</u>	 		 -		· · · · · · · · · · · · · · · · · · ·	-		_
	<u> </u>				 	· ·	 		
<u></u>	ļ	 		 			<u> </u>		
			 	 	ļ		 		
	 		ļ	 	_		 		
		 	 	 	_		 		
	 	 		 -	 		 		
			 	<u> </u>			 		
	ļ	ļ			 	 	 		
L	<u> </u>	<u> </u>	<u> </u>	L	<u> </u>	L	ــــــــــــــــــــــــــــــــــــــ	<u> </u>	L



110 Commerce Drive Allendale, NJ 07401

LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

Well Number: HW - 13
Sample I.D.(s): H/10/2xx (in process con well no.)

Allendaie, NJ 074	MI	Sample I.D.(s): 11/10/2304	a Area (Fernancia III.)
Project: PECO Quan		Date: <u>///o/2007</u> Time:	11:05 Air Temp.: 58°F
Intake Diameter: <u>&″</u> DEPTH TO : Static W	in. Casing Material: STAINA in. Intake Materia SSTAINA later Level: 1.01 ft Bottom of We rotective Casing Top of Well Casing	<u></u>	: <u>[0</u> _ft
ls prot. Does w Is conc Is padle	clearly labeled? Yes □ No casing/surface mount in good cond.? (no veep hole adequately drain well head? X crete pad intact? (not cracked or frost hea ock functional? X es □ No □ NA r casing properly capped and vented?	Yes □ No ved)	_
PURGE DATA:			
Cooling Shroud	Manufacturer: S	_	mber: <u>03647</u>
Tubing: Material: 1	Inner Diameter:	:in.	119 no
Distance from well to flo	Avg. Pumping Rate: 100 mL/min El	644	The ME
Purge Depth:/ <u>3.80</u> ft.	Avg. Pumping Rate: 100 mL/min El	apsed Time: min Volum	e Pumped gal
Was well evacuated?	•		1. 2 gol
Purging Equipment:	Dedicated Departed C	Off-Site	
SAMPLING DATA Pump: Pump Type Cooling Shroud?	Manufacturer:	Swant Model Nur	mber: <u>63647</u>
Tubing: Material:	? □ Yes □ No Inner Diameter	: 3/2 in.	
Sampling Equipment:	<u> </u>		
	் ம_ft. Sampling Pumping Rate: <u>i</u> ம்		
	ered? 🛘 Yes 🔼 No Method:_		4
Appearance:	🗅 Clear 🗅 Turbid 🕱 Color: <u>G-A</u>	<u>w रा</u> त्री □ Contains Immiscible L	iquid/
· ·	0: 0.40 Me/L Turbidity: 210	RP: 63 _mV Cond: <u>O</u> NTU ter S/N: #03828	563 M Jen
M Fi	IS/MSD ☐ Yes SZTNo M	uplicate ID: <u>N/H</u> IS/MSD ID: <u>N/H</u> uplicable)	- - . /.
Hach Kit Results: Fe	e: <u>N / A</u> Mn: <u>N / A</u> -: <u>N / A</u>	s: <u>N/A</u> co ₂ : <u>A</u>	<u> </u>
Laboratory Analysis: No. of Containers:	VOC, SUOC METAL (1 Sample Time: 11:59	As, Cd, Be, Yb)	
	in completely and correctly at time of sampling (sp		
I certify the information provided Signature.	der is accurate and the sample was collected in acc	cordance with applicable regulatory and place: 11/10/2004	project protocols.
			=

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: PRO	QUARTERLY GWS	Project Number: +4+ 23867. 208
Personnel: RAG	SLM V	Well ID: MW - 13
Purge/Sample Depth:	13-80 11.01/11.11	Sample ID: MU-13

	1	Γ	<u> </u>				-		1
Actual	[Temp	ORP	Cond	DO	Turbidity	DTW	Pumping Rate	1
Time	pН	(°C)	(mV)	M-SE	(mg/L)	(NTU)	(ft)	(mL/min)	Comments
			<u> </u>						
11:12	7.83	16.09	-60	0.522	1.30	5.25.		Bone	
15	7.65	15.30	-63	.527	82	524	11.11		
18	7.57	15.28		.525	• 72	579	11.11		
21	7.5%	15.69	-61	-525	0.57	521	11.11		
24	7.57	15.81	-62	-525	0.14	512	-		6) 100
27	7.45	15.53	-62 -63	-53/	0.29	446	11-11	 	DETECTES
30				-533	0.00	460	11.11		127ECZS
33	7.40	15.56	65	.536	0.09	424	 ' ' · ' ' 	 	
36	7.43	15.54	- 65	.536	1.74	419		 	
39 42	7.45	15.43		.562	283	329 307	11.11		
	7.36	15.30	-64	-563 -562	0.53	296	11-11		
45	+ /	15.27		,563	0.46	297	11-11		
47	7.34			- 563	0.41	278	11 - "	\ \	
50	7.34	15 ,29				210	11.11	V	
53	7.35	15.28	-63	-563	0.40	240	11.1/		
	 								
	 							 	
	 			-			/		
	 						 		
					1-1-4		-		· · · · · · · · · · · · · · · · · · ·
] 			110			SAMPLE TO	76:
				\rightarrow	110/2			Sample In	
					¥ I			(1.57	
	ļ				!		 		
 ,	-	/-					 		
			117	4			ļ		
	-							:	
·							-		
	 								·
				 .					
	/	<u> </u>					<u> </u>		
· · · · · · · · · · · · · · · · · · ·								 -	
	<u> </u>		-						
/_	 								
	 	ļ	ļ	,			-		
	<u> </u>					·			
					· ·		ļ	<u> </u>	
						<u></u>			
	ļ	-				i .			
			L						L



LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

110 Commerce Drive	Well Number: MW-124
Allendale, NJ 07401	Sample I.D.(s): 23867.008 different from well no.)
Project: PECO QUATERLY GWS Personnel: JAG, JLM	Data 10/204 Time: Weather: Sunny Air Temp.: 58°C
WELL DATA:	V
Casing Diameter: 4 in. Casing Material: 5 In August	
Intake Diameter: 6 in. Intake Material: 43 For	
DEPTH TO: Static Water Level: 5,7/ ft Bottom of Wo	
DATUM: Dop of Protective Casing Dop of Well Casin	g Gottler.
CONDITION: Is well clearly labeled? ☐ Yes ☐ No Is prot. casing/surface mount in good cond.? (no	of bent or corroded) 🌂 Yes 🗆 No
Does weep hole adequately drain well head? 4	
Is concrete pad intact? (not cracked or frost her	
ls padlock functional? Æ Yes □ No □ NA Is inner casing properly capped and vented? Æ	Is inner casing intact? AQ Yes ☐ No
	100 210
PURGE DATA:	- 0 ,
Pump: Pump Type	Solini S7 Model Number: 03647
Tubing: Material: Vy Inner Diameter	
Distance from well to flow cell: 3ft	. <u>70</u> 11.
Purge Depth: 13.08 ft. Avg. Pumping Rate: 60 mL/min E	lansed Time: 30 min. Volume Pumped: 0.95 gal
Was well evacuated? Yes No	Time Volume I dilipod. C. 10 gui
Purging Equipment: Dedicated Prepared C	Off-Site ☐ Field Cleaned
SAMPLING DATA:	20
Pump: Pump Type	Solinist Model Number: 03647
Tubing: Material: Poly Inner Diameter	<i>З/</i> г in
	·
Sampling Depth: 13.60 ft. Sampling Pumping Rate: 60	
Metals samples field filtered? ☐ Yes ☑ No Method:	
Appearance: Clear Turbid Color:	
Field Determinations: nH: 7.99 Temp: /3.79°C O	RP:-109 mV Cond: 184 M S/car
Field Determinations: pH: 7.99 Temp: 13.29 °C O Turbidity: 82	NTU Solid. 7:07 7
Meter Model: Hotcha U-22 Me	ter S/N: <i>O 3828</i>
QA/QC Information: Duplicate Yes No D	uplicate ID: NA IS/MSD ID: NA
	IS/MSD ID: <i>V/A</i> plicable)
Trip Blank ID:	plicable)
	S: <u>N/A</u> CO ₂ : <u>N/A</u>
CI-: N/A	•
Laboratory Analysis: VOC, SVOC, METACS, (AS	Cd Be Pb)
No. of Containers: Sample Time: 13:10	
This data sheet must be filled in completely and correctly at time of sampling (sp	
I certify the information provided is accurate and the sample was collected in acc Signature:	cordance with applicable regulatory and project protocols. Date: ////0/04/

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: PECO Quarterly GUS Project Number: 23867008

Personnel: RAG, 5LM V Well ID: MW-14

Purge/Sample Depth: 5.7/, Sample ID: MW-14

Actual.		Temp	ORP	Cond.	DO	Turbidity	DTW	Pumping Rate	
Time	рH	(°C)	(mV)	1 5/cm	(mg/L)	(NTU)	(ft)	(mL/min)	Comments
17.20	8.15	14.34	-126	- 859	5.72	363	5-81	· .	
12:20	8.15	14.45	-129	1-95	1.62	128	5.85	60 MM/M	
26	8.11	14.20	- 126	2.08	1.18	122	5.87	604614	
29	8.06	13.89	-122	2.19	0.95	109.0	5.91	607:42/14	O Day 2
32	7.97	13.37	-118	2.16	1.10	103.0	5.94		Detected
35	7.96	13.37	-115	2,09	4.17	99.0	5.96		D. ICO, CO.
38	7.95	13.35	-113	2.06	1.19	97.5	5.98		
41	7.94	13-28	-///	2.06	1.16	92.3 93.3	5.90		
44	7.97	13-27	-110	1.96	1.12	93.3	B.90		
47	7.99	13.26	-109	1.89	1.05	88. 9	6.01		
50	7.99	13.29	-109	1.84	1.04	82.1	6.02		
53									
56					ļ	¥			
								1	
								-	
									
					14/				
		!	İ	1	1101/		1		SAUPL TIME
	·			 					
			-	110				-	13:10
				110					
				1110					
				110					
			A Sol	1100					
				110					
				11					13:10
				110					
				11					13:10
				11					13:10
				110					13:10
		4		1110					13:10
				1110					13:10
				11					13:10
				110					13:10
				111					13:10
				110					13:10
									13:10
									13:10
									13:10

(F



LOW-FLOW GROUNDWATER SAMPLING FIELD DATA

110 Commerce Drive	Well Number: MW - 15
	Sample I.D.(s): (if different from well no.)
Project: PECO QUANTERLY GUS	Date: 11 11 0 4 Time: 11:00
Personnel: RAG, SLM	Weather: Philly Sunny Air Temp.: 48° F
WELL DATA:	
Casing Diameter:in. Casing Material:	
Intake Diameter: 6 in. Intake Material: CAST JURG	on Steel
DEPTH TO: Static Water Level: 8-52 ft Bottom of Well DATUM: ☐ Top of Protective Casing ☐ Top of Well Casing	l: 13. 45 ft Screen Length: _/ () ft ☐ Other:
CONDITION: Is well clearly labeled? ☑Yes ☐ No	
Is prot. casing/surface mount in good cond.? (not	
Does weep hole adequately drain well head? 🖃 ls concrete pad intact? (not cracked or frost heav	
ls padlock functional? ☒ Yes ☐ No ☐ NA	ls inner casing intact? ဩYes ☐ No
Is inner casing properly capped and vented?	∕es □ No
PURGE DATA:	•
Pump: Pump Type PECISTALT.C Manufacturer: S	Model Number: 03647
Cooling Shroud?	
Tubing: Material: 104 Inner Diameter:	<i>3/§</i> _in.
Distance from well to flow cell:ft	_
Purge Depth, 40 ft. Avg. Pumping Rate: 30 mL/min Elap	osed Time: <u>30 </u> min Volume Pumped: <u>6, </u> 6 gal
Was well evacuated? Yes No	
Purging Equipment: 🗴 Dedicated 🗆 Prepared Off	-Site Field Cleaned
SAMPLING DATA:	
Pump: Pump Type Penstric Manufacturer: Si	
Tubing: Material: Inner Diameter: Sampling Equipment: Dedicated Prepared Off	3/6 in.
Sampling Equipment: Dedicated D Prepared Of	
Sampling Depth: 13.40 ft. Sampling Pumping Rate: 70	
Metals samples field filtered? □ Yes 🕱 No Method:	Filter Size:
Appearance: 🛛 Clear 🖟 Turbid 🗘 Color:	☐ Contains Immiscible Liquid
Field Determinations: pH: 27.27emp: 13.3 °C ORF	
DO: <u>0.58</u> Turbidity: <u>15.2</u> Meter Model: <u>Horba U-22</u> Meter	
MS/MSD ☐ Yes 🗷 No MS/	licate ID:
Field Blank ID: (if appli	
Trip Blank ID: 2975	1
Hach Kit Results: Fe: N/A Mn: N/A	S: _ N M _ CO2: N M
Laboratory Analysis: VOC, SVOC, METALS (AS, Co	(Ph Be)
No. of Containers: 6 Sample Time: 11:45	
This data sheet must be filled in completely and correctly at time of sampling (speci	fy NA when not applicable).
I certify the information grovided is accurate and the sample was collected in accord Signature.	dance with applicable regulatory and project protocols.

LOW-FLOW GROUNDWATER FIELD DATA SHEET

Project Name: PECO QUARTERLY GWS	Project Number: 23867-008
Personnel: RAG SAM	Well ID:HW-15
Purge/Sample Depth:	Sample ID: MW- 15

	,				,				
Actual Time	рН	Temp (°C)	ORP (mV)	Cond # Spen	DO (mg/L)	Turbidity (NTU)	DTW (ft)	Pumping Rate (mL/min)	Comments
10.59	7.70	16.39	- 58	1.63	3.6(69.9	···.	<u> </u>	
11:02	7.54	16.55	-50	1.13	1.22	35.4	8.26	70 4L/M	
11: 02 05	7.50	16.55	-47	1.13	0.81	35.4 26.8	8.76	75 75	
08	7.45	15.24	-44	1.79	0.61	23.6		 	
. 11	7.44	14-97	-42	1.80	0.50	19.8	8.72		· · · · · · · · · · · · · · · · · · ·
14	7.39	14.39	-39	11.81	0.51	17.60	8.72		
17	7.38	13.98	-37	1.81	1.38	18.7			
20	7.34	13.61	-35	1.80	1.28	19.5	8.72		
23	7.16	13.35	-33	1.80	0.62	16.6	8.72		
26	7-23	13.32	~32	1.80	0.60	16.1	8.72		
26 29 3 2	7.23	13,30	-31	1.80	0. 58	15.2	8.72	-	
52	<u> </u>							- of 1	
								Star 10 - pm	0 11-45
							<u> </u>	//	
	 	-					<u> </u>		
					1 1				
	 			1	10/				
				/.	10/				- ·
				···· //				·	
					-				
			1.//20						
		//1/	111		-				· · · · · · · · · · · · · · · · · · ·
		1 1	7/				-		
		90							
	. /_								
	/								
<u> </u>	<u> </u>	, -							
ļ									
			<u>l</u>						

Details:

ELAB OF TENNESSEE CHAIN OF CUSTODY RECORD

Send Results to:

Send Invoice To:

Ship to:			* S(end Kesuits	to:		DAME TILL AND									
ELAB of	Tenness	see	NT	·	WATHINS		Name		P	age	_of					
-			N	amein see	47741 1819-7	. 57 (ASS.	C	ooler No.	1	of <u>Z</u>				
227 French L	anding Driv	ve "	· C	ompany <u>i</u>	LOUP CALOU	- 2h	Company _	ip		ate Shipp	ed <u>///</u>	9/34				
Suite 550			A	ddress 📶	O LAKERNE DA SL	- (= 5/3)	Address	 //		hipped By	v FE	DEY				
Nashville, TN	N 37228	·	C	ity,State,Zij	M. D. ÉGUY. HOICH	702 44180	City,State,Z	1P		Shipped By For Ex						
Attn: Analy		tory	P	hone 😗 🖰 🌣	-816-4400	<u> </u>	Phone			hienaeoiin	d Crac	40470				
(615) 345-11			. F	ax <u>446</u>	876-3403		Purchase Or	raer		Ctd Then he	less noted	l otherwise / There				
(615) 846-542		٠.	E	-mail	<u> </u>		E-mail			may he a sii	rcharge fo	r RUSH-contact lab)				
(010) 010 0										may oca su	1					
			1_			. *	Samplers (Sig		11/16							
Project No./Nar		7 00	PR	<u> </u>	UNERLY CO	Comple		Field	ANALYSIS REQUIR	ED 1	No/of	Lab Use Only				
Lab Use Only	Date	Time	Comp./	Sample L	ocation/Description	Sample Matrix	pH/Temp	Cond.	7.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0		Bottles	Containers/Pres.				
Lab#	Sampled	 	Grab_			- Avade and										
			-	-	ANK # 2975		*******		VOC (BIEX) SVOC		2_					
	nintry	26.5		1 Lipuc	ANN	 	9.64		VOC (Grex) SVOC	(PAN)						
	, , , , ,	105	4	No not 11	uslaso	(-W		1.03	MATRIS (As, Bo CA)	r L)	18					
	Into 154	100	<u> </u>	100 00 001	V- 31 -	- C	1/2]	7 , 7		r					
*		1,45	6_	· ww.	· C	60	1.2.30	P			6					
	11/11/04	1 1	/ Ber	301100	' 31	 	- 				,					
	11/11/34	1500	-	E 71 ;	11104	كانت المرمدا	·	745E744	\		6					
	11111129	1 E		CHI	1110	1 22 24										
		,250	,	m w	_ G	/6 W	9.70	O. CUI	₩		6	1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1				
·	May	: 25		327 22		1000	- 	 ' 	•							
1				1												
				 							ĺ					
				1							<u> </u>					
	 							,								
						•	1					· 性質學的 (教育者)				
	+	 		 					·							
		 		 												
}	1			i			·									
Cample Vit Pro	ep'd by: (Signat	nte)	 	Date	Received By: (Signati	ire) RE	MARKS				e Only 🐬					
I // ~	- // . //		11/5/04	11/7	1/2/1		gnature required	to ensure va	alidity		leadspace	Y N NA				
Mari	MILLES	fair "	13/04	, 1430			•		-	1000	iltered	Y N NA				
Relinquished b	y: (Signature)	,	Da	ite/Time	Received By: (Signati	ure)					t Containe pancies	Y N NA				
1 1 1 1	1/1/	pr.	1 1 1			İ				Cust	eals intact					
J. J.	2- 6	**************************************	11/11/2	Y 16	Descined Des (Cianata	ura)					ners Intaci	スプラダイマンス かわか みってい ちゅうぶんしん				
Relinquished b	y: (Signature)		Da	nte/Time	Received By: (Signate	uie)					ne skary					
			1													
Pagainad for I	aboratory by:	(Signature)	D:	ate/Time	Temperature	17.0%					# 1138 1					
Kecewea Jor L	Received for Laboratory by: (Signature)					4-1.4										

11 2000

Ship to:	f Town	ممم		Send Resu	lts to:		Send Invo	ice To:		Details:	Details:					
227 French Suite 550 Nashville, T. Attn: Analy (615) 345-11 (615) 846-54	ive		Company _ Address] _ City,State, Phone Fax	ME WATHINS FOR LINE TV. S ZIPANING TV. S ZIPANING TV. S ZIPANING TV. S ZIPANING TV. S ZIPANING TV. S	Mary 70	Name Company Address City,State, Phone Purchase C E-mail	Zip	7	Page of Cooler No of Date Shipped Shipped By Turnaround (Std. Turn unless noted otherwise / There may be a surcharge for RUSH-contact lab)							
Project No./Na	· · · · · · · · · · · · · · · · · · ·			co a	way 6h		Samplers (Si	gnature)*	and the second second	Land St.	11.5					
Lab Use Only Lab #	Date Sampled	Time	Comp./ Grab	Sample	Location/Description	Sample Matrix	Field pH/Temp	Field Cond.	ANALYSIS REQU	IRED	No. of Bottles	Lab Use Only Containers/Pres.				
	May	1075	<u></u>	1/2 6	Las - Jan	ريس	30.1	212	VOC(ETEX), TVO	HAH!						
	11/2/24	75	Cs.		and and	مري	138	.479	4		i, trooper					
ļ		5446	<u></u>	700	110000	6-4	Theory on the section of the section	ermen inquisi,			a property and the second					
	pol _{es} ;	1245	C»	L.	In - Co	64	747	,370	<u> </u>		Ů.					
	1,9/04	04.50		Tx , 0 %	ANR #2573 .	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	- 14.35	*************	100 (8702)		2					
-,					· · · · · · · · · · · · · · · · · · ·	ļ			,							
					· · · · · · · · · · · · · · · · · · ·			·								
							<u> </u>									
																
BSI	Sample Kit Prep'd by: (Signature) Date			142.	Received By: (Signatu		MARKS nature required	to ensure val	lidity	Lab Use Only VOA Headspace Y N NA Field Filtered Y N NA						
Relinquished by	Relinquished by: (Signature)			e/Time	Received By: (Signatur	re)				Discrep		S Y N NA Y N NA				
	Relinquished by: (Signature)			Date/Time Received By: (Signature)					,	1.7	eals intact ers Intact	Y N NA Y N NA				
Received for Lab	boratory by: (S	ignature)	Dat	e/Time	Temperature					Airbill #	;					

Nº 9022

Ship to:		,	·	end Resul	ts to:	i	Send Invoi	ice To:		Details:	Details:					
ELAB of Tennessee 227 French Landing Drive Suite 550 Nashville, TN 37228 Attn: Analytical Laboratory (615) 345-1115 (phone) (615) 846-5426 (fax)			C C P	Company Address Translate, Zity, State, Zity	in Lucies DR Large ipping cross form 0 - F 2 6 - 4900	10 FO pt	Company Address City,State,7 Phone Purchase O E-mail		Page of Cooler No of Date Shipped Shipped By Turnaround (Std. Turn unless noted otherwise / There may be a surcharge for RUSH-contact lab)							
Project No/Na	ma 7 1867	860	PERO	Quant	exty Gw	ĺ	Samplers (Si	enature)*	A CONTRACTOR OF	,	The state of the s					
Lab Use Only Lab #	Date Sampled	Time	Comp./ Grab		Location/Description	Sample Matrix	Field pH/Temp	Field Cond.	ANALYSIS REQU	f ,	No. of Bottles	Lab Use Only Containers/Pres				
	:10034	45	6-	Sin.	w -12	60	F.16	०५२४	NOCCEUX) SVOC		6					
	olistoy	. 5 ^C Y	<i>(</i> -		Ju - 13	j	7.75	10.563	l '; '		Labridae					
	lilioloy	1310	G		3 - 14	40	The Comment	184	V		V					
	10/04		<i>C</i>	ì	4 29 th 11 cm	whole contractions	The tenth was a super	amperior control contr	pc (nex)		diame.					
					•				,							
										•						
										'						
			 													
Sample Kit Prep'd by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature)			Date Control	Date /// So re/Time re/Time	Received By: (Signatu Received By: (Signatu Received By: (Signatu	*Signa	IARKS ature required	to ensure val	lidity	VOA I Field F Correc Discre Cust S	Lab Use Only VOA Headspace Y N NA Field Filtered Y N NA Correct Containers Y N NA Discrepancies Y N NA Cust Seals intact Y N NA Containers Intact Y N NA					
Received for Laboratory by: (Signature			Date/Time Temperature					-			#					

	11/9/04	238	67,008		Suny	¢00 505	The second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the second section of the section of the second section of the section of the second section of the section				11/	9/04	T
	, ,				. '		1792 5	NOTING @	Mu	<u>-5</u> ,	120 mc	1-1-	
	<u>0</u> -(LM, M7	C 0181	M			16	34/~ 8/7/6			5		
	Time	Werr	Wra	777	TN	Comments	330	MPCIT	2 M 0	Frste	•		
	0913		14.76		17.47		1400	7 me 11 MPC/J 7 re? (00	(er)	it ski	- - ريد (جرما	: ,	
	0915	9	11.12		16.34	ļ ·	, - }						
	0922	15	8.75 5.46		15.75					ا معمد قدد في عام		-	
	0923	13	10.99		15.86				-		/	- , -,-	
	0926	12	12,00		16.71						- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1	•	
	0929	<u> </u>	13.29		16.81			- n		1 - 1	/g:		
	0436	5	9,15		13.31°					! //	./.	,	
	@q33	٤١	9.11		1459		gas prompt and the	t :			1-		
	NA	3			~~	A							
	A.M.	6 -			4	A	popularing solves	· · · · · · · · //		-			
	004 60	 U.			> (1)	T			<i>#</i>		7 9 9 0.		
	094 se	Meter.	to samp	it will	de Cerla	250	A STATE OF THE STA			~			
	C456.		ربد و	- 	- 2						-		
		50 1	1	West, on the state of the state			· ·	XX					
		SAMPLI	~		į.					-	٠.		
	* *	Purc	mic/my	z 164 18		· was a same property	, , , , , , , , , , , , , , , , , , , ,						
	11 35	sampe	1206	(i) ~	w-4			, A			· .		
					,								
(Z						1			· · · · · · · ·		· 2	· Ser mining	

23867,000 11/12/04 Funny - 405 27867.08 ululiy FL-MY SS 2900 - June 140N - 5175 1000 - ILM /RAG ON-1775 1045 - SUMPLING @ MU-12: 1602/hs 0932 Puncional @ mu-11: 1602/hs ms/ust 112- Purblir & O ww-13:100 me/ms 1054. Purblir & one-15; 70-1/217 129 - EB111/04 120 - Paraisa @ nw-14.60 - 1/215 - Purceira @ nw-9, 160-4nn 13'0 Sampeira @ nw-14 - 1250 - Sampeira @ nw-9 1330 - Jun 1216 08 7 -5172 - SPARE IN MIRZ WATKING REGERDING - EVENT INBRUED HIM THAT NINE GUT OF 10 WELL WELL SANGLOSO. AGO, LOT HIM KNOW TUNE ON SING CONTRACTOR ROLLESTED THAT IN 4-15 NEWT WEEK DUE P PUVING TO

OCCUR. - 1370 - Sum / MAG - FIE FESTE

Nº 3222

ELAB OF TENNESSEE CHAIN OF CUSTODY RECORD

Ship to:	Send Results to:	Send Invoice To:	Details:									
ELAB of Tennessee 227 French Landing Drive Suite 550 Nashville, TN 37228 Attn: Analytical Laboratory (615) 345-1115 (phone) (615) 846-5426 (fax)	Name M. R. WATKIN Company Brown & CAL Address 150 (acoust Dr. City, State, Zip Mioris Birec Phone 170-826-7910 Fax 440-826-345= E-mail	Company Saint 30 Address City, State, Zip Phone	Page of									
Project No./Name 23867.008 / Peco Quartery Cu Samplers (Signature)*												
Lab Use Only Date Time Lab # Sampled	Comp./ Sample Location/Description Grab		ANALYSIS REQUIRED No. of Bottles Containers/Pres									
11900-0111 9/04 1035	G Mw-2	8.00 ,218 VCC	(BTEK), SVOC (PAH) / BJ-HELPHCI									
1110007 114/54 135		1.38 A.479	LS (As Be Cd, Pb) 6 STE-MASS PAGES									
	a how-5	6w 747										
04 11 4/04 1245	3	aco 1375 320										
05 1/9/04 0900	Trip Brank #2973		C (BTBX) 2 ZJ-HC(OHCZ									
14												
	I											
Sample Kit Prep'd by: (Signature)	Date Received By: (Signature 1936)	REMARKS *Signature required to ensure validity	Lab Use Only VOA Headspace Y (N) NA Field Filtered Y (N) NA									
Relinquished by: (Signature)	Date/Time Received By: (Signal)	nature)	Correct Containers Y N NA Discrepancies Y N NA Cust. Seals intact Y N NA									
Rélinquished by: (Signature)	Date/Time Received By: (Signa	nature)	Containers Infact Y N NA									
Received for Laboratory by: (Signature)	Date/Time Temperature	e Carrier Carr	Airbill.#									

Nº 32223

Ship to:	Send Results to:	Send Invoice To:	Details:				
ELAB of Tennessee	NT A lale	N	Para I as I				
227 Weensh Londing Drive	Name Mino WATHINS	Name	Page _ l _ of _ l Cooler No l _ of				
227 French Landing Drive Suite 550	Company Result L Company Result Address 7750 Lucere Do. Super 310 City, State, Ziphinox erces Novem ON 4413	Company					
Nashville, TN 37228	City State Zinth - Green through their	Address	Date Shipped 11 10 04				
Attn: Analytical Laboratory	Phone 146 - F26 - 49 00	Phone	Shipped By Fee Ex				
(615) 345-1115 (phone)	Fax 440-726-3400	Purchase Order	Turnaround Francisco				
(615) 845-1115 (phone) (615) 846-5426 (fax)	E-mail	E-mail					
(015) 040-5440 (IdA)	E-Ilian	£-illan	(Std. Turn unless noted otherwise / There may be a surcharge for RUSH-contact lab)				
146. E		1 /1 /11 /1	may be a synchatge for ROSH-contact lab)				
	to augusticy Gli	Samplers (Signature)*	C Company				
Lab Use Only Date Time Com	p./ Sample Location/Description Sample	le Field Field ANALYSIS RE					
Lab # Sampled Gral	b Matrix	x pH/Temp Cond. VOCCSTEX), SVO	Bottles Containers/Pres				
11121-01 11/10/04 1048 G	, mu -12 cui	3 12 0 0 738 WELMIZ (42 36	Ca Pb) Lat - well office				
	2	7.35	(d, Ps) P (CHHO) ONTO				
62 11/10/04/1159 G	- au - 3 am	5 25 0.563					
		149					
1.03 11/10/04/1310 G	- MW-14 GU	13.29 1.84	V				
1 04 11/0/04 1000 C	- TRPB 40 & # 2574	- LOC (BLEK)	2 ZJ HU PHLA				
			2 200 PM (1997) 10 10 10 10 10 10 10 10 10 10 10 10 10				
Sample Kit Prep'd by: (Signature)		MARKS	Lab Use Only VOA Headspace Y NA				
1001-11		gnature required to ensure validity	Field Filtered Y NA				
Relinquished by: (Signature)	Date/Time Received By: (Signature)		Correct Containers (Y) N NA				
1 Holland Who	1. 11/96		Discrepancies Y (N) NA				
Relinquished by: (Signature)	Date/Time Received By: (Signature)		Cust. Seals intact (Y) N NA Containers Intact (Y) N NA				
			Solitanicis marc				
Descript the Laboratory by (Signatura)	Date/Time : Temperature						
Received for Laboratory by: (Signature)			Airbill#				
1/ Month	y 1000 / 100c		CAR#				

Nº 32225

Snip to:			3	ena Kesun	is to:	. 5	sena Invoi	ce 10:		Details:					
ELAB of	Tennes	see		Jamala 1 10 2	- WATHINS	7	Name			Pagel	of /				
227 F L Y			SEX SEX		- 0			Free	···			<u> </u>			
227 French I	anding Dri	ve		company <u>r</u>	Zeovi I Cacoc Fo Lacepus De Si ip <u>Mioresus Holan</u> - F26-4900	-5 76	Company _		Cooler No	Cooler No. 1 of 7					
Suite 550			F	Address <u>H</u>	TO LACORNE DR N	115 9/3	Address	. 1	_ Date Snip	Date Shipped 11/11/54					
Nashville, TN				City,State,Z	ip <u>middlebug heila</u>	द्भारम पुराङ ्	City,State,Z		2	_ Shipped E	Shipped By For Ex				
Attn: Analyt															
(615) 345-111		Z.XXX			-826-3400		Purchase O			_ Turnarour					
(615) 846-542	26 (fax)		E E	E-mail			E-mail			_ (Std. Turn u					
					- <u></u>	·			11	may be a si	ureharge fo	r RUSH-co	ontact lab)		
Project No./Nan	ne 2384	7.00	8 / P	= C 0 (MARTERLY GE	J .	Samplers (Sig	gnature)*	112	Page					
Lab Use Only	Date	Time	Comp./	Sample l	Location/Description	Sample	Field	Field	ANALYSIS	REQUIRED	No/of		Use Only		
Lab#	Sampled	ļļ	Grab	 	· · · · · · · · · · · · · · · · · · ·	Matrix	pH/Temp	Cond.			Bottles		iners/Pres.		
11139-01	uluby	5000	C. C. C. C. C. C. C. C. C. C. C. C. C. C	TripBe	LANK # 2975				JOC COTT	EX)	2	211- 441	L PHCZ		
02	111124	105	4	1	ins/msp	66	8.69	1.03	momes (As, b	sroclean j	183	1 537 71B-	11C1 0 HZ2		
23	11/11/04	1145	<u></u>	mw -		63	7.23	_	,		6	2H-0	rines		
	1111104	1205			11104	WATERL		erenere.			6				
					1119		יינו אינו אינו אינו אינו אינו אינו אינו								
05	11/11/04	1250	6-	I mu	1-9	aw	8-30	0, (47	N. Control of the con		6	8.3-1			
		-	<u> </u>				 			·	<u> </u>				
1.41.									1						
***		 							· · · · · · · · · · · · · · · · · · ·	<u> </u>		100000	Legal State of the		
·															
Sample Kit Prep	'd by: (Signatu	re)	11/5/04	Date 1430	Received By. (Signatur		ARKS ture required	o ensure val	idity	VOA F	ie Only leadspace iltered	Y	(N) NA		
Relinquished by	(Signature)	/	Dat	e/Time	Received By: (Signatur	re)				«Correct	t Container	s « (Y \	N NA N NA		
1/2			ulular	1 1600						Discrep	oancies eals intact	· · · · · · · · · · · · · · · · · · ·	N NA N NA		
Refinquished by:	(Signature)			e/Time	Received By: (Signatur	re)					ners Intact	W)	N NA		
											ر				
Received for Lab	officery by: (S	ignature)	11 - 12	e/Time	Temperature 🕢 🐃	<u>.</u>				Airbill	# <u>_/_/</u>	<u> </u>			
		<u>در این این این این این این این این این این</u>		190	Z-076					CAR#					